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Efficacy and safety of Risankizumab for the treatment of moderate-to-severe psoriasis In patients with malignancy:a retrospective multi-center experience
Fabio S. Maramao, Arianna Zangrilli, Pier Paolo Di Domenico, Luca Bianchi, Elena Campione, Paolo Antonetti, Maria Esposito, Maria Concetta Fargnoli, Clara De Simone, Giacomo Caldarola, Diego Orsini

Tissue-Sparing Management of Recurrent Basal Cell Carcinoma Near a Tracheostomy Us ing CO_2 and Pulsed Dye Laser
Giulio Bortone, Luca Guarino, Luca Gargano, Elena Zappia, Marco Gratteri, Alessandro Clementi, Mario, Sannino, Giovanni Cannarozzo, Steven Paul Nisticò

From ancient times to a new iconic led device on the treatment of wrinkles and hyperpigmentation, combining two wavelengths: 630nm and 830nm.
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GIULIANI

RICERCA E INNOVAZIONE IN DERMATOLOGIA

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La dermatologia è sempre stata una disciplina capace di cogliere il cambiamento. Nel corso degli anni abbiamo assistito all'ingresso di nuove tecniche, nuovi materiali, nuove metodiche rigenerative che hanno ampliato le nostre possibilità terapeutiche. Oggi siamo di fronte a una trasformazione ancora più profonda: l'intelligenza artificiale (IA) sta ridefinendo il modo in cui osserviamo, studiamo e proteggiamo la pelle.

Per la nostra comunità scientifica, l'IA non è un sostituto della competenza medica, ma uno strumento che può potenziare la nostra capacità di diagnosi, prevenzione e cura. La dermatologia è una specialità visiva e interpretativa: integrare algoritmi in grado di analizzare milioni di immagini e parametri clinici significa ampliare la nostra capacità di lettura, ridurre la variabilità soggettiva, migliorare l'accuratezza diagnostica e intervenire più precocemente.

Consideriamo ad esempio l'impatto sulla prevenzione oncologica. L'IA applicata alla dermatoscopia digitale può ridurre drasticamente il tempo tra l'insorgenza di un segno sospetto e la valutazione specialistica, ottimizzando il triage, facilitando il follow-up e aumentando la sicurezza dei pazienti.

In un Paese come l'Italia, dove l'incidenza del melanoma è in crescita, questo rappresenta un progresso di enorme valore sanitario.

Naturalmente, ogni avanzamento richiede responsabilità.

Come società scientifica abbiamo il dovere di promuovere strumenti certificati, validati e clinicamente affidabili, prevenendo l'uso improprio di applicazioni non controllate che rischiano di banalizzare la complessità della dermatologia.

I dati sensibili dei pazienti, la trasparenza degli algoritmi e la definizione di nuovi standard professionali rappresentano sfide che ISPLAD è pronta ad affrontare con serietà e visione.

L'intelligenza artificiale non è il punto di arrivo: è l'inizio di una nuova fase della nostra disciplina. Una fase in cui la competenza del dermatologo rimane centrale, ma viene potenziata da strumenti capaci di amplificare ciò che possiamo osservare e comprendere. Una fase in cui la dermatologia diventa più predittiva, più rigenerativa, più personalizzata.

Come Presidente ISPLAD, credo fermamente che la nostra società debba essere protagonista di questa evoluzione, guidando la comunità dermatologica nell'integrazione responsabile dell'IA, sviluppando linee guida, promuovendo formazione e contribuendo a un uso etico e clinicamente avanzato di queste nuove tecnologie.

Il futuro della dermatologia è già iniziato. Sta a noi costruirlo con competenza, rigore scientifico e passione per la pelle.

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CONTENTS

Pag. 136 Non-Surgical Blepharoplasty: Critical Review and Clinical Observations
Giuseppe Colombo, Matteo Basso, Emanuela Di Lella, Andrea Dotto, Eugenio Merlo

Pag. 144 Sequential Combined Laser Therapy for Post-Traumatic Facial Scars
Alessandro Clementi, Piero Campolmi, Giovanni Cannarozzo, Luca Guarino, Elena Zappia, Luca Gargano, Antonio Alma, Luigi Bennardo, Eugenio Provenzano, Marco Gratteri, Steven Paul Nisticò

Pag. 150 Efficacy and safety of Risankizumab for the treatment of moderate-to-severe psoriasis in patients with malignancy: a retrospective multi-center experience
Fabio S. Maramao, Arianna Zangrilli, Pier Paolo Di Domenico, Luca Bianchi, Elena Campione, Paolo Antonetti, Maria Esposito Maria Concetta Fargnoli, Clara De Simone, Giacomo Caldarola, Diego Orsini

Pag. 160 Tissue-Sparing Management of Recurrent Basal Cell Carcinoma Near a Tracheostomy Using CO_2 and Pulsed Dye Laser
Giulio Bortone, Luca Guarino, Luca Gargano, Elena Zappia, Marco Gratteri, Alessandro Clementi, Mario Sannino, Giovanni Cannarozzo, Steven Paul Nisticò

Pag. 166 From ancient times to a new iconic led device on the treatment of wrinkles and hyperpigmentation combining two wavelengths: 630nm and 830nm.
Rita Bassi, Marta Serafino

Pag. 174 Fast clinical response in a patient treated with bimekizumab
Lucia Finistauri Guacci, Luca Guarino, Giulio Bortone, Elena Zappia, Steven Paul Nisticò, Annunziata Dattola

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Non-Surgical Blepharoplasty: Critical Review and Clinical Observations



Giuseppe Colombo

Giuseppe Colombo[1], Matteo Basso[2], Emanuela Di Lella[3], Andrea Dotto[4], Eugenio Merlo[5]

ABSTRACT

Background: *Surgical blepharoplasty remains the gold standard for upper eyelid dermatochalasis, yet non-surgical options (e.g., plasma energy devices, fractional lasers, microneedling radiofrequency) are increasingly promoted as quicker, safer alternatives. Evidence supporting their long-term efficacy and safety is heterogeneous, and objective assessments are scarce.*
Objective: *We report the clinical and histopathological sequelae of prior plasma-based upper-eyelid treatments in a patient subsequently undergoing surgical blepharoplasty, and to contextualize these findings within the current literature.*
Methods: *A 54-year-old woman with recurrent upper-eyelid laxity after two sessions of plasma "exeresis" underwent bilateral upper blepharoplasty under local anesthesia. Excised skin was submitted for histopathology.*
Results: *For the first time in the literature, alterations following the use of plasma exeresis at the eyelid level have been observed and described. Macroscopic changes included disruption of the eyelid's structural anatomy, while microscopic findings demonstrate the presence of fibrotic, devascularized tissue characterized by chronic inflammation.*
Conclusions: *Even when clinically "well tolerated," plasma-based non-surgical blepharoplasty is not biologically neutral and may induce persistent dermal remodeling with potential implications for subsequent surgery. Non-surgical approaches may have a role in carefully selected mild cases but should not be considered equivalent to surgery for moderate–severe dermatochalasis. Rigorous patient selection, specialist training, comprehensive informed consent, and objective monitoring are recommended*

KEYWORDS
upper eyelid, dermatochalasis, non-surgical blepharoplasty, plasma exeresis, sequelae.

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INTRODUZIONE

L'intervento chirurgico di blefaroplastica superiore è considerato il gold standard nel trattamento della blefarocalasi della palpebra superiore (1). Nonostante sia uno tra gli interventi più frequentemente eseguiti, la blefaroplastica chirurgica tende ad essere una procedura invasiva e non definitiva, che può produrre cicatrici e può richiedere ritocchi chirurgici, qualora mal eseguita (2).
Negli ultimi anni, la blefaroplastica non chirurgica ha suscitato un crescente interesse sia tra i pazienti, che tra i professionisti del settore medico-estetico, diventando una delle procedure più richieste di ringiovanimento palpebrale (3).
Questa tendenza è sostenuta dalla diffusa percezione di una maggiore sicurezza, rapidità di esecuzione e tempi di recupero significativamente più brevi rispetto alla blefaroplastica chirurgica tradizionale (3). Le procedure di blefaroplastica non invasiva — spesso basate su tecnologie come l'energia al plasma, o plasma exeresi (4), i laser frazionati o la radiofrequenza a microaghi (5) — vengono sempre più spesso proposte ai pazienti come un'alternativa "facile" ed accessibile, contribuendo a creare un'immagine semplificata che ne ha favorito la loro rapida diffusione.

Tuttavia, la crescente popolarità di queste tecniche solleva importanti interrogativi riguardo alla loro reale efficacia, alla loro durabilità nel tempo ma soprattutto alla loro sicurezza e alle corrette indicazioni cliniche della blefaroplastica non chirurgica, soprattutto quando viene presentata come alternativa sicura a procedure chirurgiche consolidate e dai risultati più prevedibili. La presunta semplicità di esecuzione, unita alla facilità di accesso per i professionisti, ha favorito una medicalizzazione estetica sempre più aggressiva, spesso senza un'adeguata formazione specifica. In questo scenario, diventa fondamentale un'analisi scientifica rigorosa che metta a confronto gli approcci chirurgici e non chirurgici, valutandone vantaggi, limiti e implicazioni etiche e cliniche.
Questa pubblicazione scientifica ha lo scopo di esporre un caso clinico correlato all'utilizzo dell'energia al plasma sulla palpebra superiore e le sue implicazioni dal punto di vista istopatologico e chirurgico. Inoltre, come scopo secondario verrà analizzata la letteratura scientifica presente riguardo le complicanze riportare in seguito a tecniche di blefaroplastica non chirurgica, quali la plasma exeresi.

Caso Clinico

Riportiamo il caso clinico di una paziente di 54 anni giunta all'osservazione del nostro team nel mese di Febbraio 2025 lamentando una situazione di blefarocalasi, associata ad un quadro clinico di eccesso di cute palpebrale superiore, lassità tissutale e sguardo appesantito.
La paziente riportava un'anamnesi patologica silente.
Dall'anamnesi clinica è emerso che la paziente in precedenza si era sottoposta, presso altra Clinica, a due sedute di blefaroplastica non chirurgica mediante dispositivo al plasma (plasma exeresi), a circa 18 mesi di distanza l'una dall'altra. Non sono disponibili dati riguardo la potenza del device utilizzata durante ciascuna sessione.
Sebbene inizialmente soddisfatta del risultato ottenuto in seguito ai due trattamenti di blefaroplastica non invasiva, la paziente ha presto presentato una recidiva della lassità palpebrale (**Figura n. 1**) per la quale ha deciso di rivolgersi all'Autore per una consulenza chirurgica specialistica.



FIGURA 1.
Visione frontale ad occhi aperti della paziente. Si può notare la recidiva del quadro di dermatocalasi a livello delle palpebre superiori, con asimmetria del risultato clinic ottenuto a distanza dopo due procedure di plasma exeresi.

Dall'attenta valutazione clinica preoperatoria è emerso come la guarigione post-traumatica, conseguente al duplice trattamento di sublimazione dermica con energia al plasma, abbia alterato completamente la conformazione della palpebra superiore, con sovvertimento della fisiologica crease palpebrale, rimpiazzata da uno spesso piastrone cicatriziale, ed associata ad alterazione della mobilità naturale delle palpebre superiori.
È emerso, inoltre, un quadro di iperpigmentazione cutanea post-infiammatoria associata ad un'alterazione macroscopica della texture della cute trattata, rispetto a quella circostante, come è possibile denotare nella **Figura n. 2**.
Sulla base del quadro clinico constatato è stata posta indicazione all'intervento chirurgico correttivo di blefaroplastica superiore.
La procedura è stata realizzata, in anestesia locale, mediante asportazione dell'eccesso cutaneo interessato dal piastrone cicatriziale ed è stato necessario anche ridurre parzialmente la porzione pretarsale del muscolo orbicolare, interessato da aderenze fibrotiche cutanee.

Per finalità clinico-scientifiche, la losanga di tessuto asportata è stata inviata per indagine isto-patologica.
Da tale analisi è emerso un quadro microscopico caratterizzato da alterazioni compatibili con pregressa esposizione termica, tra cui:
- Ispessimento epidermico con marcata ortocheratosi;
- Fibrosi nel derma reticolare superficiale;
- Infiltrato linfocitario perivascolare indicativo di infiammazione cronica di basso grado;
- Perdita dell'architettura dermica con disorganizzazione delle fibre elastiche e di collagene.

Il decorso post-operatorio è stato regolare, con buona guarigione dei tessuti palpebrali e cicatrizzazione, associato ad un elevato grado di soddisfazione della paziente. Il confronto tra la precedente esperienza e l'esito chirurgico ha fornito indicazioni preziose sulla reale efficacia, sui limiti e sulle potenziali conseguenze a lungo termine dei trattamenti non invasivi in questa delicata area anatomica e ha spinto gli Autori ad approfondire questo tema attraverso una revisione della letteratura scientifica su questo argomento non comunemente trattato.



FIGURA 2.
Visione frontale ad occhi chiusi.
È possibile osservare l'andamento patologico dela crease delle palpebre superiori che non coicide con la fisiologica curvatura del globo oculare e mancanza della distizione della texture della porzione cutanea palpebrale da quella sopraccigliare, le quali risultano essere fuse in un unico piastrone cicatriziale.

Revisione della letteratura scientifica

La blefaroplastica chirurgica rappresenta da decenni il gold standard nel trattamento dell'eccesso di cute e di grasso palpebrale, con risultati duraturi e ampiamente documentati.
Numerosi studi ne hanno dimostrato l'efficacia non solo dal punto di vista estetico, ma anche funzionale, in particolare nei casi di ptosi palpebrale significativa (6) (7). Tuttavia, i tempi di recupero post-operatori, i rischi legati all'anestesia e la necessità di competenze altamente specialistiche hanno progressivamente spinto sia i pazienti, che molti professionisti, soprattutto coloro che non sono Chirurghi Plastici, verso alternative meno invasive.
In questo scenario si è affermata la blefaroplastica non chirurgica — un termine che in realtà comprende varie tecniche, tra cui si annoverano dispositivi al plasma (plasma exeresis) (8), la radiofrequenza ablativa o frazionale (9), il laser CO_2 frazionato (10) e, in misura minore, gli ultrasuoni focalizzati ad alta intensità (HIFU) (11). La tecnica di rigenerazione cutanea al plasma (PRS) sta diventando un'interessante alternativa non chirurgica per il trattamento conservativo della dermatocalasi (3).
Consiste in un manipolo che genera energia ionizzata da una radiofrequenza bipolare provocando un riscaldamento superficiale dei tessuti (12) (13).
Un danno termico controllato e limitato trasforma il tessuto solido in fase gassosa: il tessuto viene sublimato creando un passaggio diretto dallo stato solido a quello gassoso.
Il contatto diretto con la pelle è evitato.
Poiché non si crea un circuito chiuso della corrente elettrica, l'eventuale resistenza elettrica del tessuto non influisce sulla sublimazione. Ciò determina una lieve denaturazione delle fibre di collagene e di altre proteine cutanee innescando una cascata di processi: neocollagenesi, disgregazione/riduzione dell'elastosi solare dermica, attivazione dei fibroblasti con migrazione dal derma più profondo e rilascio di citochine (14).
Il calore viene assorbito dal tessuto trattato e non si trasferisce ai tessuti circostanti né al sottocute (14).
La sicurezza della plasma exeresi in un modello animale è stata dimostrata per la prima volta da Scarano e colleghi (15); il plasma ha mostrato di limitare il danno allo stroma connettivale, consentendo una guarigione più rapida sia nell'immediato sia nei

processi riparativi postoperatori, rispetto alla terapia con elettrobisturi/bisturi a radiofrequenza.
La plasma exeresi è stata utilizzata in medicina estetica sull'uomo per trattare le rughe periorali (16), la dermatocalasi palpebrale (17) e altre condizioni cutanee benigne (14).
Nonostante in letteratura siano presenti varie pubblicazioni scientifiche che dimostrano l'efficacia clinica di questo trattamento non invasivo a livello della palpebra superiore, solo poche approfondiscono in modo esaustivo eventuali complicanze o effetti collaterali legati a questa metodica.
Tra gli effetti collaterali e/o complicanze si possono trovare edema temporaneo riferito da più studi risoltosi in 1-4 giorni (18) (14) (19), temporanea formazione di crosticine cutanee che, una volta cadute, in un lasso temporale variabile tra 3 e 10 giorni post-trattamento (20) (18), lasciano spazio ad un eritema transiente a livello dermico.
Questo eritema cutaneo si risolve di solito spontaneamente tra la quarta e la dodicesima settimana, secondo uno studio eseguito da Kongpanichakul e colleghi (21).
Solo 2 casi su 250 pazienti (incidenza 0.8%) trattati nello studio di Rossi E. e colleghi hanno riportato iperpigmentazione cutanea, riferita autorisoltasi entro 3 mesi dal trattamento (14).
Sempre 2 casi su 106 trattati (incidenza 1,89 %) e descritti da Velthuis e Mosmuller hanno riportato iperpigmentazione post-infiammatoria, riferita però non autorisoltasi, per la quale è stato necessario intervenire con crema topica all'idrochinone al 5%, con non completa risoluzione della complicanza (22).
Fitzpatrick e Rothaus, in uno studio che ha coinvolto 120 pazienti, hanno riportato, in aggiunta, una possibile riattivazione erpetica post-trattamento (1 caso) e una sovrainfezione batterica in 3 casi (23).
Nonostante in letteratura scientifica si trovino numerose pubblicazioni riguardo l'utilizzo dell'energia al plasma nel trattamento della blefarocalasi, nessuna di queste approfondisce in maniera esaustiva le implicazioni istopatologiche legate all'utilizzo di questa tecnica, soprattutto a livello palpebrale.
Anzi viene definita come una tecnica sicura e di facile impiego dal personale medico, nella maggior paste dei casi libera da alcuna complicanza (24).

Solo recentemente, sono stati pubblicati due case report (25) (26) che hanno analizzato istologicamente biopsie cutanee umane trattate con plasma exeresi, confermando la presenza di fibre di collagene di tipo III e il rimodellamento della matrice dermica successivo al trattamento. L'analisi istologia richiede procedure invasive e i risultati derivano da una sezione trasversale, con una visualizzazione solo parziale: l'area di studio è limitata al tessuto escisso. L'escissione bioptica, poi, può complicare la valutazione delle terapie estetiche, poiché esita in cicatrici. Un'alternativa proposta è, la microscopia confocale a riflettanza (RCM) che consente un'identificazione "in vivo", non invasiva, delle cellule e dei tessuti della matrice dermica, realizzando una sorta di biopsia ottica (27) Immagini singole ad alta risoluzione acquisite dalla superficie cutanea, fino a circa 200 μm di profondità (stack), permettono un'esplorazione strato per strato dell'intera epidermide e del derma superficiale. Recentemente, la RCM è stata applicata su larga scala per valutare i cambiamenti cutanei legati all'invecchiamento, identificando diversi pattern del collagene correlati all'istopatologia (28). Longo e colleghi hanno delineato, mediante RCM, le modificazioni cutanee dopo laser per il ringiovanimento cutaneo a livello epidermico e dermico, evidenziando la deposizione di fibre collagene lunghe e rettilinee attraverso la neocollagenesi (29).
Non sono stati trovati in letteratura casi di indagini istopatologiche eseguite su biopsie condotte sulle palpebre realizzate in caso di complicanza insorta in seguito a trattamento di plasma exeresi.

Discussione

Nonostante l'intervento chirurgico di blefaroplastica rimanga indiscutibilmente il gold standard nel trattamento della blefarocalasi, si assiste da alcuni anni ad un crescente aumento di procedure ambulatoriali che mirano a risolvere questa condizione clinica, supportato da una maggiore e più insistente richiesta di tempi di recupero più brevi e minore invasività, con apparentemente minor o nulla incidenza di complicanze.

La plasma exeresi si colloca in questo scenario avvalorata da numerose pubblicazioni scientifiche che ne sanciscono l'efficacia, comprovando risultati estetici.
Tuttavia, la letteratura scarseggia di trial clinici su larga scala, condotti con end-points mirati ed oggettivabili: la qualità delle evidenze scientifiche è ancora disomogenea. La necessità di pubblicare questo case-report e revisionare la letteratura deriva proprio da questo fatto.
Il caso presentato mostra come la blefaroplastica non chirurgica con energia al plasma, pur essendo generalmente ben tollerata e percepita come "minimamente invasiva", non sia biologicamente neutra.
Nel nostro caso, due trattamenti distanziati di ~18 mesi hanno lasciato esiti istologici persistenti (ortocheratosi marcata, fibrosi del derma reticolare superficiale, infiltrato linfocitario perivascolare a basso grado, disorganizzazione delle fibre elastiche e collagene) che si sono tradotti clinicamente in un'alterazione dell'anatomia del distretto palpebrale con sovvertimento della crease, residuando un piastrone cicatriziale connesso ad un'alterazione della mobilità delle palpebre superiori della paziente.
Ciò ha reso indicata una blefaroplastica superiore, eseguita con buon esito, ma non senza implicazioni per la pianificazione e realizzazione chirurgica.
Questa complicanza sia macroscopica, che soprattutto a livello microscopico, è legata all'intrinseca modalità di guarigione dal danno termico indotto dal device che si manifesta come una guarigione per seconda intenzione. Guarigione che difficilmente può essere controllata dall'operatore, ma che risulta essere prettamente "paziente-dipendente".
Il caso riportato è il primo caso presente in letteratura scientifica a mostrare un esame istopatologico completo realizzato su una complicanza da plasma exeresi: un tessuto patologico caratterizzato di assenza di vascolarizzazione e fibrosi cicatriziale.
Nessun esame istologico trovato in letteratura, infatti, riporta questi dati, ma piuttosto l'attenzione viene sempre riposta sul grado di stimolazione della neocollagenesi indotta dal danno termico.
Sebbene siano riconosciuti gli effetti della plasma exeresi sullo skin tightening, gli Autori vogliono porre l'attenzione sull'effettiva sicurezza dell'applicazione di questa tecnologia su di un distretto anatomico alquanto delicato, come quello palpebrale.
Spesso il personale medico che realizza queste procedure non invasive non è specialista in Chirurgia Plastica e Ricostruttiva, mancando probabilmente di una formazione specifica del distretto palpebrale e delle capacità di riconoscere questo genere di complicanze, che probabilmente nella maggior parte dei casi passa come misconosciuto. Inoltre, le linee guida dell'applicazione ed utilizzo di questo energy-device sono spesso carenti e contrastanti, lasciando la curva di apprendimento alla sola esperienza clinica dell'operatore. La letteratura mostra un'elevata variabilità nella formazione degli operatori e nella regolamentazione dei dispositivi, con conseguenti risultati talora imprevedibili.
Diversi autori hanno sottolineato il rischio di banalizzare la procedura, aggravato da normative poco chiare riguardo alle specifiche qualifiche degli operatori.
Il caso esposto si inserisce in questo filone osservazionale, ma presenta due elementi distintivi:

- Analisi istologica sistematica del tessuto escisso,
- La paziente aveva effettuato due trattamenti non chirurgici in un ampio intervallo temporale, dimostrando comunque persistenza di alterazioni istologiche anche a distanza di molto tempo dal trattamento.

Questi confronti evidenziano che, pur essendo generalmente ben tollerata, la blefaroplastica non chirurgica non è priva di conseguenze strutturali, alcune delle quali possono incidere su interventi chirurgici futuri.
La crescente produzione scientifica richiede un impiego più critico e selettivo di queste tecnologie, accompagnato da una corretta informazione del paziente su benefici reali, limiti ed effetti tissutali a lungo termine.

Limitazioni dello studio

La principale limitazione di questo studio è che si tratta di un case report. Servirebbe innanzitutto una maggior preparazione degli operatori del settore medico nel riconoscere alcune complicanze, come quella riportata, che spesso non vengono riconosciute, in modo tale da eseguire studi con maggiore casistica e rendere più completa e sicura la conoscenza in materia.

Conclusioni

La blefaroplastica non chirurgica si è affermata come procedura di facile accesso, rapida e apparentemente priva di rischi significativi, spesso promossa al di fuori dei contesti specialistici. Tuttavia, il nostro caso clinico—supportato da evidenze istologiche—solleva importanti interrogativi sull'effettiva efficacia, sicurezza e appropriatezza di questa pratica.
A differenza della blefaroplastica chirurgica, che prevede la rimozione mirata dell'eccesso tessutale nel rispetto dei piani anatomici, la versione non invasiva tenta di contrarre, retrarre l'eccesso cutaneo senza asportarlo. Pur risultando inizialmente meno traumatica, tale approccio non consente un controllo preciso del risultato finale né una reale adattabilità funzionale dell'area palpebrale; al contrario, può indurre alterazioni tissutali subcliniche o manifeste—quali fibrosi, disorganizzazione dermica e infiammazione cronica—compromettendo qualità tissutale e anatomia.
Esiti spesso modesti e temporanei possono favorire la ripetizione dei trattamenti, aumentando il rischio di danni cumulativi e potenzialmente irreversibili. Inoltre, l'assenza di una reale asportazione tissutale ne limita l'efficacia complessiva, soprattutto nei pazienti con ptosi significativa o marcata lassità.
In conclusione, sebbene la blefaroplastica non chirurgica possa avere un ruolo in casi selezionati e lievi, non dovrebbe essere considerata un'alternativa equivalente alla chirurgia né sul piano anatomico, né per la durata dell'esito estetico. È fondamentale che il personale medico sia adeguatamente formato e che i pazienti siano compiutamente informati.
Le indicazioni vanno definite con rigore, per evitare un approccio superficiale e commercializzato che potrebbe compromettere sicurezza e soddisfazione del paziente. Una diagnosi accurata un'indicazione clinica ragionata resta essenziale per stabilire l'idoneità alla procedura.

BIBLIOGRAFIA

1. DeAngelis DD, Carter SR, Seiff SR. Dermatochalasis. International ophthalmology clinics. 2002, Vol. 42(2), 89-101.

2. A., Barone. Non-surgical blepharoplasty with the novel plasma radiofrequency ablation technology. Skin Res Technol. 2020, Vol. 26, 121-124.

3. Miotti G, Zeppieri M, Pederzani G, Salati C, Parodi PC. Modern blepharoplasty: From bench to bedside. World Journal of Clinical Cases. 2023, Vol. 11(8), 1719.

4. al., Tsioumas GS et. New Treatment with Plasma Exeresis for Non-Surgical Blepharoplasty. EC Ophthalmology. 2017, Vol. 5(4), 156-159.

5. Migliardi R, Tsirouki T, Vasquez LM, Galatoire O, Ntountas I. Alternative Techniques for Oculofacial Rejuvenation. [aut. libro] Verity DH, Paridaens D. Quaranta Leoni FM. Oculoplastic, Lacrimal and Orbital Surgery. Cham : Springer, 2024.

6. Patel RM, Aakalu VK, Setabutr P, Putterman AM. Efficacy of Muller's muscle and conjunctiva resection with or without tarsectomy for the treatment of severe involutional blepharoptosis. Ophthalmic Plastic & Reconstructive Surgery. 2017, Vol. 33(4), 273-278.

7. Bernardini FP, de Conciliis C, Devoto MH. Mini-Invasive Ptosis Surgery. Orbit. 2006, Vol. 25(2), 111-115.

8. Rossi E, Farnetani F, Pellacani G. Applications of plasma exeresis in dermatology. Hi-Tech Dermo. 2016, Vol. 2, 17-22.

9. Verner I, Naveh HP, Cotofana S. A novel ablative radiofrequency microplasma nonsurgical blepharoplasty for dermatochalasis. Dermatologic Therapy. 2020, Vol. 33, e14002.

BIBLIOGRAFIA

10. Punthakee, Xerxes, et al. New technologies in aesthetic blepharoplasty and brow-lift surgery. Facial Plastic Surgery. 2010, Vol. 26(3), 260-265.

11. Hwang Y, Yi K. Clinical Experience and Practical Considerations of High-Intensity Focused Ultrasound for Eyelid Sagging. Medical Research Archives. 2025, Vol. 13(8).

12. Foster KW, Moy RL, Fincher EF. Advances in plasma skin regeneration. J Cosmet Dermatol. 2008, Vol. 7(3), 169-179.

13. Alster TS, Konda S. Plasma skin resurfacing for regeneration of neck, chest and hands: Investigation of a novel device. Dermatol Surg. 2007, Vol. 33(11), 1315-1321.

14. Rossi E, Farnetani F, Trakatelli M, Ciardo S, Pellacani G. Clinical and confocal microscopy study of plasma exeresis for nonsurgical blepharoplasty of the upper eyelid: a pilot study. Dermatologic surgery. 2018, Vol. 44(2), 283-290.

15. Scarano A, Carinci F, Sinjari B, Artese L, et al. Skin lesions induced from the radiosurgical unit and voltaic arc dermoabrasion: a rabbit model. Eur J In amm. 2011, Vol. 9, 89-94.

16. Scarano A, Mortellaro C, Mavriqi L, Di Cerbo A. Evaluation effectiveness of the voltaic arc dermabrasion in perioral rhytides eradication. J Craniofac Surg. 2016, Vol. 27, 1205-1208.

17. Tsioumas GS, Georgiadou I, Ntountas I. Upper blepharoplasty in relation to surgical blepharoplasty. Pinnacle Med Med Sci. 2014, Vol. 1, 436-440.

18. Hassan AM, Rady AAE, Shalaby O E, Shafik HM, Shaker ESE. Evaluation of plasma exeresis as a new technique for non surgical treatment of dermatochalasis. Journal of Dermatological Treatment. 2022, Vol. 33(2), 1017-1022.

19. Giroux PA, Hersant B, SidAhmed-Mezi M, et al. The outcomes assessment of the plasma blade technology in upper blepharoplasties: a prospective study on a series of 25 patients. Aesthetic Plast Surg. 2019, Vol. 43(4), 948-955.

20. MM, Toyos. Continuous wave fractional CO2 laser for the treatment of upper eyelid dermatochalasis and periorbital rejuvenation. Photomed Laser Surg. 2017, Vol. 35(5), 278-281.

21. Kongpanichakul L, Chuangsuwanich A, Kongkunnavat N, Tonaree W. Efficacy of low-temperature plasma for treatment of facial rejuvenation in asian population. Plastic and Reconstructive Surgery–Global Open. 2021, Vol. 9(9), e3812.

22. Nipshagen MD, Velthuis PJ, Mosmuller DG. Periorbital postinflammatory hyperpigmentation after plasma exeresis. Dermatologic Therapy. 2020, Vol. 33(3), e13404.

23. R., Fitzpatrick. Plasma/CO2 complication comparison, advanced treatment approach, latest Portrait PSR3 research. [aut. libro] American Society of Dermatologic Surgery 2007 Meeting. Portrait Plasma Skin Regeneration: Treatment Protocols and Aesthetic Outcomes. Chicago, IL, October 11–14, 2007.

24. Sotiris T, Irini G, Ioannis N. Noninvasive upper Blepharoplasty in relation to surgical blepharoplasty. . Pinnacle Medicine & Medical Sciences. 2014, Vol. 1(5), 436-440.

25. Tsioumas GS, Vlachodimitropoulos D, Goutas N. Clinical and histological presentation after plexr application, needle shaping (vibrance) and O.F.F. Pinnacle Med Med Sci. 2014, Vol. 2, 522-530.

26. Gloustianou G, Sifaki M, Tsioumas GS, Vlachodimitropoulos D, et al. Presentation of old and new histological results after plasma exercises (plexr) application (regeneration of the skin tissue with collagen III). Pinnacle Med Med Sci . 2016, Vol. 3, 983-990.

27. Gill M, Longo C, Farnetani F, Cesinaro AM, et al. Non-invasive in vivo dermatopathology: identification of reflectance confocal microscopic correlates to specific histological features seen in melanocytic neoplasms. J Eur Acad Dermatol Venereol. 2014, Vol. 28, 1069-1078.

28. Longo C, Casari A, Beretti F, Cesinaro AM, et al. Skin aging: in vivo microscopic assessment of epidermal and dermal changes by means of confocal microscopy. J Am Acad Dermatol. 2013, Vol. 68, e73-82.

29. Longo C, Galimberti M, De Pace B, Pellacani G, et al. Laser skin rejuvenation: epidermal changes and collagen remodeling evaluated by in vivo confocal microscopy. Lasers Med Sci. 2013, Vol. 28, 769-776.

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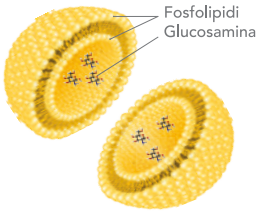
COMPLESSO FOSPIDINA

Tecnologia biomimetica liposomiale

221 volontari hanno testato con ottimi risultati tutti i prodotti dermocosmetici della linea a base di Fospidina attraverso 33 test in gruppi da 20 a 60 volontari a seconda del prodotto

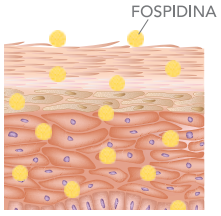
La linea SKINIUS THE DOCTOR IS IN è nata per rispondere ai problemi cutanei legati all'ageing, anche in caso di pelle sensibile. Tutti i prodotti sono ideali anche per il consiglio del dermatologo in termini di **efficacia**, **tollerabilità** e **dermoaffinità**. Oltre ai test di base per la sicurezza previsti dal Regolamento Cosmetico Europeo, abbiamo testato a fondo le performance più mirate delle nostre formulazioni con solide **prove strumentali** e **cliniche**, sotto controllo dermatologico. Tali esami sono stati condotti su gruppi di volontari con **pelle sensibile**. Gli ottimi risultati rendono fiduciosi della tollerabilità per un ampio numero di tipologie cutanee.

L'innovazione scientifica della linea SKINIUS THE DOCTOR IS IN è il complesso Fospidina, a base di fosfolipidi e glucosamina, messo a punto dopo oltre 30 anni di ricerche in biologia cellulare e in dermatologia. Agisce sia come attivo anti-aging che come veicolante per massimizzare le prestazioni della glucosamina, precursore dell'acido ialuronico.

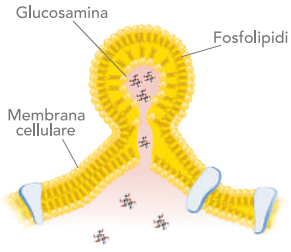


COME AGISCE

I fosfolipidi si dispongono in doppio strato a costituire una sfera cava (liposoma) all'interno della quale si posizionano le molecole di glucosamina.



Il liposoma penetra negli strati più profondi trasportando la glucosamina, che favorirà la produzione di nuovo acido ialuronico e la fisiologica rigenerazione cellulare.



Il liposoma, che è costituito da fosfolipidi come le membrane cellulari, si integra facilmente con la membrana cellulare creando un canale attraverso cui passa la glucosamina.

Fonte: B. Mandalari e D. Tedeschi, Journal of Plastic Dermatology joined with Update in Plastic Surgery, vol 12, 2, 2016 Fosfolipidi, glucosamina, fitoestrogeni e rigenerazione cutanea

RUGHE

-12,3% Profondità media

-16% Rughe superficiali



ELASTICITÀ CUTANEA

+6,8% 30-49 anni

+8,1% 50-70 anni

IDRATAZIONE CUTANEA

-93% Evaporazione dell'acqua (TEWL)

+7% Idratazione profonda

+8,9% Idratazione superficiale

Fonte: A. Di Pietro e I. Luppino, Journal of Plastic Dermatology, vol 10, 1, 2014
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Sequential Combined Laser Therapy for Post-Traumatic Facial Scars



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ABSTRACT

Post-traumatic facial scars represent a significant therapeutic challenge in dermatology, as they are frequently associated with vascular alterations, exogenous pigmentation and skin depressions. In this context, the combined use of different laser sources allows for a personalised and multidimensional approach. We present the case of a 22-year-old patient with linear and branched atrophic scars, persistent erythema and traumatic nasal pigmentation, subsequent to facial trauma.

The treatment involved the sequential use of pulsed dye laser (PDL) for the vascular component, Q-switched Nd:YAG 1064 nm for dermal pigmentation, surgical CO_2 for contour regularisation and fractional CO_2 combined with 1540 nm for dermal restructuring.

The protocol was well tolerated, with no significant complications. Two-month follow-up showed resolution of erythema and traumatic pigmentation, with a reduction in scar depth and improvement in skin homogeneity. Visual Analog Scale (VAS) score indicated an estimated 75–80% improvement compared to baseline. The patient reported aesthetic and functional benefits, with a positive impact on quality of life.

This case suggests that the sequential integration of specific laser sources, each targeting a specific tissue, may represent an effective, safe and reproducible strategy for the management of complex post-traumatic scars.

KEYWORDS

post-traumatic facial scars; multimodal laser therapy; dual-wavelength laser;

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INTRODUCTION

Post-traumatic scars represent a relevant therapeutic challenge in clinical dermatology, as they can induce marked aesthetic changes and psychological distress [1]. The morphological and aetiological variability of scars, ranging from atrophic to hypertrophic and keloid forms, with associated pigmentary and vascular changes, makes their treatment particularly complex [2]. Despite the availability of topical, intralesional, surgical, and physical therapies, clinical outcomes often remain unsatisfactory in complex or treatment-resistant scars [3].

In this context, the advent and continued evolution of laser technologies have significantly advanced the therapeutic approach to scarring, offering tools capable of selectively modulating tissue remodelling processes [4].

The pulsed dye laser (PDL), operating at wavelengths of 585-595 nm, is recognised as the gold standard for the treatment of scar erythema.

Its selective action on ectatic vessels not only reduces redness and inflammation but also appears to promote collagen remodelling in the superficial dermis, helping to improve pain and pruritus [5]. At the same time, for exogenous pigmentations, such as traumatic asphalt tattoos, Q-switched (QS) lasers and picosecond lasers offer an effective solution, targeting the selective fragmentation of the pigment with minimal thermal damage to the surrounding tissue [6,7].

Regarding the atrophic component, ablative fractional lasers, such as CO2 at 10600 nm, are widely established in clinical practice.

They create microscopic thermal zones (MTZs) of controlled ablation, stimulating neocollagenesis and remodelling of the dermal matrix, leading to a progressive improvement in texture and scar depression [8–10].

The efficacy of ablative systems can be further enhanced by combination with non-ablative fractional lasers, such as 1540 nm or 1570 nm lasers [11–13]. Moreover, the exploration of combined therapies, such as the association of laser procedures with bioactive substances like exosomes, represents a promising direction for future studies aimed at optimising regenerative outcomes [14]. Several studies suggests that the sequential and combined use of different laser sources, each targeting a specific chromophore or structural aspect of the scar (vascular, pigmentary, atrophic), may optimise aesthetic and functional outcomes in complex scars [15–16].

In this context, we present a case of complex post-traumatic facial scars, successfully treated by a sequential multimodal laser protocol including PDL, QS Nd:YAG, surgical CO2 laser and combined fractionated CO2/1540 nm laser.

Case report

A 22-year-old male patient presented with facial scarring following a bicycle accident three months earlier. Initial physical examination revealed multiple erythematous, linear and branched atrophic scars in the frontal region extending towards the glabella, nasal bridge and upper periorbital area.

A focal grey-brown discoloration consistent with traumatic dermal tattooing was observed on the upper nasal bridge.

The scars showed a clear vascular component, with sharp linear borders suggestive of post-traumatic dermal remodelling (**Figure 1**).



Fig.1: T(0) evaluation, the patient showed multiple linear and branched atrophic scars with persistent erythema, extending from the forehead to the nasal bridge. The lesions had sharp borders and a prominent vascular component, without signs of active inflammation.

No signs of hypertrophy or active inflammation were present. The patient reported significant aesthetic and interpersonal discomfort, avoiding social life in the months following the trauma. After obtaining informed consent, a multimodal therapeutic protocol involving different laser sources was initiated to target the vascular, pigmentary, and atrophic components of the lesions. The rationale for laser selection is summarised in **Table 1**.

Table 1. Laser devices and corresponding clinical indications.

Laser type	Indication
Pulsed Dye Laser (PDL) – Synchro VasQ®	Treatment of erythematous component of scars (vascular targeting)
Q-switched Nd: YAG 1064 nm – Toro®	Removal of traumatic dermal tattoo (pigment targeting)
CO_2 Laser (freehand mode) – DuoGlide®	Debulking and vaporization of scar edges (contour regularization)
Fractional CO_2 + 1540 nm (μScan DOT) – DuoGlide®	Global dermal remodelling of atrophic scars (collagen stimulation and texture improvement)

During the initial session, all erythematous scar areas were treated using a pulsed dye laser (PDL; Synchro VasQ®, DEKA, Florence).

An antibiotic ointment was then applied to the treated area twice daily for 10 days.
The pigmented lesion on the bridge of the nose was treated in the same session with a Q-switched Nd:YAG 1064 nm laser (Toro®, DEKA, Florence), using a 4 mm spot, fluence 4.5 J/cm², frequency 1 Hz, until a homogeneous whitening of the treated area was obtained.
No acute complications were reported, except for transient erythema on the bridge of the nose and typical purpura in the areas treated with PDL, which resolved in about 2 weeks.
Four weeks later, during the second session, the edges of the most depressed scars were vaporised with a CO_2 laser (DuoGlide®, surgical freehand mode, DEKA, Florence) with a power of 0.3–0.6 W power and 20 Hz frequency, in order to reduce the depth of the scar depressions.
Subsequently, in the same session, all scars were treated with a CO_2 fractional laser combined with a non-ablative 1540 nm laser (DuoGlide®, μScan DOT, DEKA, Florence).
The parameters used were 14 W in High Pulse mode, 500 μm spacing, and stack 2 for the CO_2 laser; and 6 W power with a 5 ms dwell time for the 1540 nm laser. The two wavelengths were emitted in immediate sequence on the same area.
After the procedure, an antibiotic ointment was applied for two weeks.
Complete re-epithelialization was observed within 12-14 days.
Two additional sessions of combined CO_2 + 1540 nm were performed at intervals of approximately 45 days, with parameters similar to those of the second session. No significant adverse events were observed during treatment, except for a transient post-treatment erythema, which resolved spontaneously.
After every dual-laser session the patient applied topical hyaluronic acid serum twice a day to the treated area for 3 days.
Following each laser treatment, whether vascular, pigment-targeted or fractional, daily broad-spectrum photoprotection (SPF 50+) was recommended after completion of the corresponding dressing protocol, in order to minimise the risk of post-inflammatory pigmentation and optimise long-term aesthetic results.

Two months after the last treatment session, clinical evaluation documented a clear improvement in scar appearance.
At the follow-up visit (**Figure 2**), the scar erythema was completely resolved, as was the discolouration from the traumatic tattoo.
Notable reduction in the depth and redness of the scars was observed, with progressive flattening of the atrophic tracts in the frontal and nasal areas, resulting in a more uniform skin surface and restoration of normal dermal tone.



Fig.2: Post-treatment image showing resolution of scar erythema and dermal pigmentation. A marked improvement in texture and contour is evident, with flattening of atrophic areas and restoration of skin homogeneity.

The overall aesthetic result was considered very satisfactory by both the patient and the clinicians.
The improvement in the appearance of the scars was assessed through both clinical evaluation by dermatologists and subjective evaluation using a 10-point Visual Analog Scale (VAS).
The patient rated the outcome as 7.5–8 out of 10, corresponding to an estimated 75–80% improvement compared to baseline.
He also reported significant psychosocial benefit and resumed regular social activities, with a substantial enhancement in quality of life.
Limitations of this case report include the lack of standardized intermediate photographic documentation and the absence of a validated scale for objective scar quantification.

Discussion

Post-traumatic facial scars are heterogeneous clinical entities, typically characterised by vascular abnormalities (e.g., erythema, telangiectasias), pigmentary deposits from traumatic tattooing or hemosiderin, and contour irregularities such as atrophy or hypertrophy [17].

In these cases, a single therapeutic approach is rarely sufficient to improve all aspects of the scar.

Our case demonstrates that a sequential combination strategy of different laser sources, each targeting a specific component of the scar, can lead to a superior and faster clinical result than the isolated use of single lasers.

The use of pulsed dye laser (PDL), through selective photothermolysis of oxyhaemoglobin within ectatic microvessels, effectively treated the erythematous component of the scars, leading to a progressive reduction in vascular alterations and associated inflammatory symptoms [18,19].

Liu et al. demonstrated that PDL treatment significantly improved the appearance of hypertrophic scars by reducing erythema and improving texture, with a 65% overall improvement after three sessions, while Kim et al. showed that early PDL intervention within 3 weeks of injury substantially inhibited pathological scar development in surgical wounds [20,21].

The presence of traumatic dermal pigment (asphalt tattoo) required a specific wavelenght.

The 1064 nm Q-switched Nd:YAG laser together with picosecond lasers is considered the gold standard for the removal of dark pigments, due to its high affinity for melanin.

In cases of traumatic facial tattoos, the combined application of PDL and QS Nd:YAG laser has been reported to effectively eliminate foreign particles without causing further scarring.

Bonan et al. described a series of cases of asphalt tattoos successfully treated with PDL followed by QS Nd:YAG, highlighting the disappearance of pigmentation and a simultaneous improvement in the quality of the underlying atrophic scar [22].

In our patient, the use of QS 1064 nm enabled progressive fragmentation and clearance of the dermal pigment.

By reducing active erythema and exogenous pigment prior to the ablative phase, we have also potentially mitigated the risk of prolonged inflammation and chromatic alterations after fractional laser treatment.

The final stage of our therapeutic approach involved the remodelling of the atrophic scar defect.

The CO_2 laser in free handpiece mode offers precise control for scar revision, allowing targeted ablation of fibrotic tissue while preserving surrounding healthy skin.

Krupashankar et al. reported successful outcomes in treating post-traumatic scars using CO_2 laser in surgical mode, with significant improvement in scar texture and appearance after 1-3 sessions, particularly effective for raised or hypertrophic components [23]

Fractional ablative CO_2 laser remains one of the most effective treatments for atrophic scars, due to its ability to vaporise micro-columns of tissue (micro-ablations) surrounded by islands of intact dermis, triggering a repair process with the synthesis of new collagen [24].

In our protocol, we have combined fractional CO_2 with a non-ablative 1540 nm laser source delivered in sequence on the same fractional pattern.

Ex vivo experimental evidence has confirmed that sequential 10,600/1,540 nm emission results in more extensive areas of thermal damage at depth and greater collagen fibre contraction than single emission, while maintaining a comparable safety profile [25]. Recent clinical studies have already documented positive results using CO_2 and 1540 nm lasers in combination for surgical and burn scars [13,26].

Clinical validation of this synergy was presented in a recent review by Clementi et al., which highlighted its broad applicability across various indications. Sequential 1540 nm and CO_2 laser delivery was found to enhance dermal remodelling more effectively than fractional CO_2 alone, while reducing epidermal damage and recovery time [11]. These experiences support our results, highlighting the value of multimodal laser therapy in treating complex conditions [27].

However, a thorough understanding of the mechanisms of action of each laser, laser-tissue interactions and careful clinical evaluation are essential for tailoring the treatment protocol to the individual characteristics of each patient.

Conclusion

The case presented demonstrates that a sequential multimodal approach using different laser technologies can lead to optimal results in the treatment of post-traumatic facial scars.
The integrated use of a vascular laser (PDL) for erythema, a Q-switched laser for traumatic pigmentation, ablative CO_2 for contour regularisation and fractional CO_2 combined with non-ablative wavelengths for dermal remodelling, led to complete resolution of chromatic alterations and substantial improvement in scar volume deficit.
This sequential therapeutic strategy has demonstrated a high safety profile, with no significant adverse events, and has resulted in a high degree of patient satisfaction, with a positive impact on his quality of life.
Although the reported experience refers to a single case, it suggests that the synergistic integration of different laser technologies, each optimised for a specific tissue target, represents a promising paradigm for the management of complex facial scars.

REFERENCES

1. *Bayat, A.; McGrouther, D.A.; Ferguson, M.W.J. Skin Scarring. Br Med J 2003, 326, 88–92, doi:10.1136/BMJ.326.7380.88.*

2. *Kauvar, A.N.B.; Kubicki, S.L.; Suggs, A.K.; Friedman, P.M. Laser Therapy of Traumatic and Surgical Scars and an Algorithm for Their Treatment. Lasers Surg Med 2020, 52, 125–136, doi:10.1002/LSM.23171.*

3. *Gold, M.H.; McGuire, M.; Mustoe, T.A.; Pusic, A.; Sachdev, M.; Waibel, J.; Murcia, C. Updated International Clinical Recommendations on Scar Management: Part 2 - Algorithms for Scar Prevention and Treatment. Dermatol. Surg. 2014, 40, 825–831, doi:10.1111/DSU.0000000000000050.*

4. *Elsaie, M.L.; Choudhary, S. Lasers for Scars: A Review and Evidence-Based Appraisal. J. Drugs Dermatol. 2010, 9, 1355–1362.*

5. *Clementi, A.; Cannarozzo, G.; Amato, S.; Zappia, E.; Bennardo, L.; Michelini, S.; Morini, C.; Sannino, M.; Longo, C.; Nistico, S.P. Dye Laser Applications in Cosmetic Dermatology: Efficacy and Safety in Treating Vascular Lesions and Scars. Cosmetics 2024, 11, 227, doi:10.3390/COSMETICS11060227.*

6. *Torbeck, R.L.; Schilling, L.; Khorasani, H.; Dover, J.S.; Arndt, K.A.; Saedi, N. Evolution of the Picosecond Laser: A Review of Literature. Dermatol. Surg. 2019, 45, 183–194, doi:10.1097/DSS.0000000000001697.*

7. *Gorouhi, F.; Davari, P.; Kashani, M.N.; Firooz, A. Treatment of Traumatic Tattoo with the Q-switched Nd:YAG Laser. J. Cosmet. Laser Ther. 2007, 9, 253–255, doi:10.1080/14764170701708263.*

8. *Omi, T.; Numano, K. The Role of the CO2 Laser and Fractional CO2 Laser in Dermatology. Laser Ther. 2014, 23, 49–60, doi:10.5978/ISLSM.14-RE-01.*

9. *Campolmi, P.; Cannarozzo, G.; Bennardo, L.; Clementi, A.; Sannino, M.; Nisticò, S.P. Fractional Micro-ablative CO2 Laser as Therapy in Penile Lichen Sclerosus. J. Lasers Med. Sci. 2021, 12, e61, doi:10.34172/jlms.2021.61.*

10. *Filippini, M.; Del Duca, E.; Negosanti, F.; Bonciani, D.; Negosanti, L.; Sannino, M.; Cannarozzo, G.; Nisticò, S.P. Fractional CO2 Laser: From Skin Rejuvenation to Vulvo-Vaginal Reshaping. Photomed. Laser Surg. 2017, 35, 171–175, doi:10.1089/PHO.2016.4173.*

REFERENCES

11. Clementi, A.; Cannarozzo, G.; Guarino, L.; Zappia, E.; Cassalia, F.; Alma, A.; Sannino, M.; Longo, C.; Nisticò, S.P. Sequential Fractional CO2 and 1540/1570 Nm Lasers: A Narrative Review of Preclinical and Clinical Evidence. J. Clin. Med. 2025, 14, 3867, doi:10.3390/JCM14113867.

12. García, P.N.; Andrino, R.L. Resurfacing of Atrophic Facial Acne Scars with a Multimodality CO2 and 1570 Nm Laser System. J. Cosmet. Dermatol. 2024, 23, 13–18, doi:10.1111/JOCD.16283.

13. Fiorentini, F.; Fusco, I. Synergistic Sequential Emission of Fractional 1540 nm and 10 600 Lasers for Abdominal Postsurgical Scar Management: A Clinical Case Report. Am. J. Case Rep. 2023, 24, e938607-1–e938607-4, doi:10.12659/AJCR.938607.

14. Clementi, A.; Cassalia, F.; Cannarozzo, G.; Guarino, L.; Zappia, E.; Bennardo, L.; Mazzetto, R.; Danese, A.; Longo, C.; Nisticò, S.P. Laser-Assisted Exosome Delivery (LAED) with Fractional CO2 Laser: A Pilot Two-Case Report and Narrative Review. Cosmetics 2025, 12, 199, doi:10.3390/cosmetics12050199.

15. Clementi, A.; Cannarozzo, G.; Guarino, L.; Zappia, E.; Cassalia, F.; Danese, A.; Mazzetto, R.; Longo, C.; Nisticò, S.P. Combined Laser Strategies for Scar Treatment: A Comprehensive Review of Synergistic Protocols. Preprints 2025, doi:10.20944/preprints202501.0132.v1.

16. Nunez, J.H.; Strong, A.L.; Comish, P.; Hespe, G.E.; Harvey, J.; Sorkin, M.; Levi, B. A Review of Laser Therapies for the Treatment of Scarring and Vascular Anomalies. Adv. Wound Care (New Rochelle) 2023, 12, 68–84, doi:10.1089/WOUND.2021.0045.

17. Ardeshirpour, F.; Shaye, D.A.; Hilger, P.A. Improving Posttraumatic Facial Scars. Otolaryngol. Clin. North Am. 2013, 46, 867–881, doi:10.1016/j.otc.2013.06.006.

18. D e Las Alas, J.M.G.; Siripunvarapon, A.H.; Dofitas, B.L. Pulsed Dye Laser for the Treatment of Keloid and Hypertrophic Scars: A Systematic Review. Expert Rev. Med. Devices 2012, 9, 641–650.

19. Yang, Q.; Ma, Y.; Zhu, R.; Huang, G.; Guan, M.; Avram, M.M.; Lu, Z. The Effect of Flashlamp Pulsed Dye Laser on the Expression of Connective Tissue Growth Factor in Keloids. Lasers Surg. Med. 2012, 44, 377–383, doi:10.1002/LSM.22031.

20. Liu, Z.; Zhang, J.; Guo, X. Clinical Effects of Pulsed Dye Laser Dynamically Combined with Triamcinolone Acetonide in the Treatment of Postoperative Recurrence Keloids. Indian J. Dermatol. 2023, 68, 486, doi:10.4103/IJD.IJD_883_22.

21. Kim, Y.H.; Kim, H.S.; Kim, H.K.; Kim, S.Y.; Lee, J.; Kim, Y.C.; Park, Y.J. Very Early Pulsed Dye Laser Intervention for Optimal Cosmetic Outcome in Post-Thyroidectomy Scars. Clin. Cosmet. Investig. Dermatol. 2024, 17, 877–884, doi:10.2147/CCID.S444885.

22. Bonan, P.; Bassi, A.; Bruscino, N.; Schincaglia, E.; Gavrilova, M.; Troiano, M.; Verdelli, A. Combined Pulsed Dye Laser and Q-Switched Nd:YAG Laser Intraumatic Facial Tattoo Removal: A Case Series. Dermatol. Ther. 2019, 32, doi:10.1111/DTH.13069.

23. Krupashankar, D.S. Standard Guidelines of Care: CO 2 Laser for Removal of Benign Skin Lesions and Resurfacing. Indian J. Dermatol. Venereol. Leprol. 2008, 74, 61.

24. Kołodziejczyk, K.; Hop, I.; Branewska, J.; Ostrowska, B.; Matysek, M.; Olszanicka, A.; Imioło, J.; Maciąg, A.; Niemiec, R.; Galas, A. CO2 Ablative Fractional Laser - Mechanism of Action and Assessment of Safety, Effectiveness in the Treatment and Possible Side Effects Based on a Review of Scientific Literature. J. Educ. Health Sport 2023, 21, 72–77, doi:10.12775/JEHS.2023.21.01.008.

25. Nisticò, S.P.; Bennardo, L.; Zingoni, T.; Pieri, L.; Fusco, I.; Rossi, F.; Magni, G.; Cannarozzo, G. Synergistic Sequential Emission of Fractional 10.600 and 1540 Nm Lasers for Skin Resurfacing: An Ex Vivo Histological Evaluation. Medicina (Kaunas) 2022, 58, doi:10.3390/MEDICINA58091308.

26. Campolmi, P.; Quintarelli, L.; Fusco, I. A Multimodal Approach to Laser Treatment of Extensive Hypertrophic Burn Scar: A Case Report. Am. J. Case Rep. 2023, 24, e939022-1–e939022-5, doi:10.12659/AJCR.939022.

27. Amato, S.; Nisticò, S.P.; Clementi, A.; Stabile, G.; Cassalia, F.; Dattola, A.; Rizzuto, G.; Cannarozzo, G. Multispectral Imaging and OCT-Guided Precision Treatment of Rhinophyma with CO2 and Dye Lasers: A Comprehensive Diagnostic and Therapeutic Approach. Cosmetics 2024, 11, 221, doi:10.3390/COSMETICS11060221.

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Efficacy and safety of Risankizumab for the treatment of moderate-to-severe psoriasis in patients with malignancy: a retrospective multi-center experience



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ABSTRACT

BACKGROUND: Psoriasis is a chronic, erythematous-desquamative inflammatory skin disease, relapsing, characterized by hyperproliferation, dermal inflammation, and an incomplete maturation of keratinocytes. IL-23 plays a pivotal role in the pathogenesis of psoriasis leading to the production of IL-17 and other pro-inflammatory cytokines and chemokines. IL-23 has a pro-oncogenic role too. In fact, it promotes phosphorylation of STAT3 and STAT4, it is an activator of NFkB, it promotes tumour angiogenesis by inducing factors such as VEGF and PGE2, it increases expression of endothelial marker CD31 and proliferative marker Ki67. While the efficacy of anti-IL-23 drugs is widely demonstrated in the general psoriasis population, there is a paucity of data regarding the use of this therapy in patients with a positive oncology history.

METHODS: Case histories of patients with psoriasis from four centers were pooled and analyzed. Every patient received oncological clearance to start the therapy with Risankizumab. The studied population underwent clinical dermatological examination every 12 weeks. The endpoints were to evaluate the safety of Risankizumab in terms of the absence of neoplastic progression or reactivation also using specialized oncology consults and the efficacy of the drug against psoriatic disease in terms of PASI response and Dermatology Life Quality Index (DLQI) performance.

RESULTS: Seventeen patients with a history of previous neoplasm or diagnosed with neoplasm within 6 months of starting Risankizumab therapy for moderate-severe psoriasis were selected. The grade of neoplasms of the examined patients was I for 11 patients, II in 3 patients, IV in 1 patient and N.A. in 2 patients. PASI and DLQI improve statistically significative (p <0,001 and p <0,003 respectively). No patients experienced progression of neoplastic disease during the corresponding follow-up period. No adverse events were recorded.

CONCLUSIONS: Our results show that therapeutic Risankizumab is effective and safe in patients with a positive oncological history. However, further research is needed with a larger study sample, stratifying patients by grade and type of malignancy, clarifying which classes of patients may benefit most from this type of treatment.

KEYWORDS

Psoriasis, Neoplasms, Biological therapy.

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INTRODUCTION

Psoriasis is a chronic, erythematous-desquamative, relapsing inflammatory skin disease characterized by hyperproliferation, dermal inflammation, and incomplete maturation of keratinocytes[1].

Psoriasis affects 1-5% of the world's population: the prevalence, which varies among different geographic areas, is highest (about 3%) in many European countries and North America, while in South America, Asia and Africa the disease is less prevalent with a prevalence of 0.5%[2].

This disease, evenly distributed in the two sexes, tends to appear early in females, can occur at any age although in most cases it develops within the third decade of life[3]. Psoriasis has a complex, multifactorial pathogenesis in which predisposing genetic factors and environmental factors play a key role[1]. Indeed, both genetic and environmental factors condition the abnormal immune response, predominantly mediated by type 1 lymphocytes, and directed toward a probable epidermal autoantigen, and the response of keratinocytes to inflammatory and proliferative signals produced by pathogenic T lymphocytes.

Numerous scientific evidence suggest that the clinical manifestation of psoriatic plaque represents the final step in a complex biochemical process involving a large panel of cells, cytokines, chemokines, and growth factors involved in the acquired and innate immune response[4].

In prepsoriatic skin, stimuli initiate the pathogenesis of psoriasis. Increased amounts of tumor necrosis factor (TNF) and interferon mediate activation of interleukin IL-23-producing dermal dendritic cells (DCs) that trigger IL-17-producing (T17) cell clonal expansion.

Activated T17 cells produce substantial amounts of IL-17, IL-26, IL-29, and TNF, leading to a 'feedforward' inflammatory cytokine cascade cytokine cascade in epidermal keratinocytes and the subsequent development of the early psoriatic lesion. CCL20 secreted by activated keratinocytes recruits inflammatory dermal DCs (TIP-DCs) and T17 cells which perpetuate inflammation.

IL-22, together with IL-17- induced IL-19 and IL-36 produced by keratinocytes, contribute to epidermal hyperplasia and altered terminal differentiation, which lead to the characteristic thickening of thickening of the skin seen in patients with chronic psoriasis.

Without treatment, the ongoing 'feedforward' inflammatory cascade maintains a chronic psoriatic plaque by a self-amplifying, positive-feedback loop involving DCs, T lymphocytes, and keratinocytes[5].

IL-23 is a heterodimer consisting of two subunits p40 and p19. The p40 subunit is common to IL-12.

This cytokine not only induces a Th1-type immune response by increasing the production and secretion of IFN-γ by memory T cells but also increases the release of IL-17 responsible for the activation of iNOS, enzymes induced by nitric oxide synthetase[6].

IL-23 interacts through a heterodimer receptor (IL-23R) expressed by innate and adaptive immune cells, which include Th17, natural killer T cells, γδ T cells, and RORγt+7 innate lymphoid cells.

IL-23R activates the cascades of JAK2/TYK2 and STAT38 which is essential in T-cell development and Th17 polarization.

IL-23 is part of the interleukin 12 family along with IL-12, IL-27, IL-35 and IL-39. IL-12 family cytokines are known for their essential role in the regulation of innate and adaptive immune responses.

The functions of IL-12 family cytokines have been extensively studied in the context of infections and autoinflammatory diseases.

The ability of these cytokines to modulate immune responses in cancer has attracted considerable interest. Cytokines of the IL-12 family are typically secreted by cells of innate immunity but can also be secreted by adaptive immune cells depending on the disease and immune context. In fact, members of this cytokine family are also well known for their role in adaptive immune responses [9].

Due to their broad-spectrum role in regulating immune responses, cytokines of the IL-12 family are recognized as promising candidates for modulating anti-tumor immunity[10].

The pro-tumorigenic role of IL-23 was first reported by Langowski et al., where it was observed that genetic deletion or blockade of IL-23 in mice led to an increased infiltration of cytotoxic T-cells with protective effects against cancer [11].

The pro-oncogenic role of IL-23 in evident in another study reported that IL-6, VEGF, CCL22 and/or PGE2 produced by tumor cells recruited tumor-associated macrophages, which in turn produced IL-23 and maintained suppressive Treg activity in the TME. IL-23 produced by tumor-associated neutrophils activated downstream AKT and p38 pathways in mesenchymal stem cells and transformed these mesenchymal stem cells into cancer-associated fibroblasts[12].

Tumor-educated neutrophils induce the transformation of MSCs into CAFs through the production of inflammatory factors (IL-17, IL-23 and TNF-α) and the activation of the AKT and p38 pathways, which in turn promote the proliferation, migration and invasion of gastric cancer cells,

ultimately accelerating gastric cancer growth and metastasis[12]. IL-23 also stimulates IL-17 production by γδ T cells, which can support tumour growth.
IL-23 signals through IL-12Rβ1 and IL-23R in target cells and activates Jak2 and Tyk2, resulting in phosphorylation of STAT3 and STAT4.
IL-23R signalling in CD4+ T cells activates STAT3, which in turn stabilises RORγt expression and increases IL-17 gene transcription. IL-23 or IL-17-induced IL-23 signaling also activates NFkB, which regulates genes responsible for the recruitment of tumor-associated macrophages (TAMs) and MDSCs in the TME.
Therefore, IL-23 is recognized as a mediator of the Th17 response and plays an important role in shaping immune responses against cancer.
For instance, CCL20 produced by cancer cells cooperated with stromal IL-23 to recruit IL-17-producing Th17 cells into the TME. IL-17, in turn, promotes tumor angiogenesis by inducing angiogenic factors, such as VEGF and PGE2, and by activating oncogenic STAT3 signalling, which is essential for the expression of pro-survival and pro-angiogenic genes[13].
IL-23 may also enhance inflammation in the TME and promote tumorigenesis independently of IL-17. Elevated IL-23R expression on tumor cells increases tumor-associated inflammation and promotes cancer development and metastasis. For instance, IL-23 induced STAT3 activation in IL-23R-expressing lung cancer cells and stimulated their proliferation[14].
Elevated serum IL-23 in breast cancer patients is associated with worse survival; serum IL-23 concentrations were measured with a quantitative enzyme immunoassay technique.
A statistically significant higher systemic cytokine value was found in women with cancer compared to the control group (14.52±11.39 pg/ml vs. 6.35±4.63 pg/ml, P<0.0001). Patients with shorter overall survival had higher IL-23 values, suggesting a negative prognostic correlation.
No significant differences in IL-23 levels were found between patients according to biomolecular characteristics, different subtypes, and the presence of metastatic disease.
This work investigated, for the first time, the role of IL-23 in breast cancer patients, showing a significant increase compared to the control group[15].
Furthermore, it has been reported that patients with increased IL-23 expression in the primary hepatocellular carcinoma (HCC) microenvironment have a higher potential to develop metastasis.
It has been reported that IL-23 increases tumour cell motility and increases MMP9 levels by activating the nuclear factor (NF)-kB/p65 pathway. Furthermore, IL-23 expression correlates positively with the expression of MMP9 and IL-17A in primary HCC16. Similarly, IL-23 promotes the proliferative capacity of primary human IL-23R+ oral squamous cell carcinoma (SSC) cell lines by activating the NF-kB/p65 pathway[17]. Serum levels of IL-23 are significantly elevated in patients with colorectal carcinoma compared to control patients and are strongly associated with VEGF overexpression, so they may play an important role in colorectal carcinogenesis[18].
Similar studies reported that IL-23 could promote IL-17-mediated tumourigenesis by converting innate lymphoid cell type 1 (ILC1) to ILC3, resulting in a poor prognosis for lung cancer patients[19]. Prostate cancer patients may exhibit resistance to androgen deprivation therapy, a condition known as castration-resistant prostate cancer (CRPC).
Higher levels of IL-23 have also been observed in blood and tumor samples from patients with CRPC.
The main source of IL-23 has been shown to be myeloid-derived suppressor cells (MDSC).
IL-23 secreted by MDSCs can activate the androgen receptor pathway in prostate cancer cells, promoting cell survival and proliferation under androgen deprivation conditions. Intra-tumor infiltration of MDSCs and the concentration of IL-23 increased in blood and tumor samples from patients with CRPC. Antibody inactivation of IL-23 restored sensitivity to androgen deprivation therapy in mice. Overall, these results reveal that MDSCs promote CRPC by acting in a non-autonomous manner. Treatments that block IL-23 may counteract MDSC-mediated resistance to castration in prostate cancer and synergize with standard therapies20. Another study showed that high IL-23 is associated with poor survival in patients with renal cell carcinoma. Mechanistically, intra-tumour IL-23+ macrophages increase both Treg cell proliferation and IL-10/TGF-β secretion and suppress the cytotoxic function of CD8+ T cells. Blocking IL-23 promoted the cytotoxicity of CD8+ T-cells and improved the overall survival of mice.

In addition, blockade of IL-23 together with immune checkpoint blockade increased therapeutic benefit[21].
IL-23 signaling stimulates the expression of regulatory genes, such as IL-10, TGF-β and VEGF, and increases the infiltration of M2 macrophages and immunosuppressive neutrophils that reduce the ability of effector CD4+ and CD8+ T cells to infiltrate tumors. IL-23 promotes tumor growth and lung metastasis through the induction of tumor-related inflammation and the absence of immune surveillance.
IL-23 promotes tumor-associated inflammatory responses, such as the infiltration of M2 macrophages and neutrophils and their elevated secretion of immunosuppressive cytokines, such as transforming growth factor-β (TGF-β), IL-10 and vascular endothelial growth factor (VEGF) in tumor tissues, as well as the increase of matrix metalloprotease MMP9.
In addition, IL-23 increases the expression of the endothelial marker CD31 and the proliferative marker Ki67 in tumors. Furthermore, IL23 induces immunosuppression by reducing the infiltration of CD4+and CD8+T cells into tumor tissues.
In conclusion, IL-23 is an important molecule in tumor progression, simultaneously facilitating pro-tumor inflammation processes, such as angiogenesis, immunosuppressive cytokines and infiltration of M2 macrophages and neutrophils, and suppressing anti-tumor immune responses through the reduction of CD4+ and CD8+ T cells[22].
These studies revealed the effects of IL-23 on the modulation of both immune and tumor cells.
Thus, neutralization of IL-23 may enhance tumor-specific immune responses and control tumor cell proliferation in certain cancer types, thus aiding in the management of cancer pathology while simultaneously affecting psoriatic pathology.
There is little evidence available to guide physicians in the treatment of psoriasis in cancer patients.
Patients with malignancies are excluded from randomized clinical trials and information on patients with previous cancers can only come from observational studies.
The primary objective of our works is to consolidate the efficacy and safety of risankizumab in cancer patients who could not be treated with biological drugs before 5 years from the primary tumor.
This article presents the results of our analysis.

Materials and methods

A multicenter retrospective observational analysis was conducted to evaluate the efficacy, safety, and tolerability of the biotechnology anti IL-23 drug Risankizumab in cutaneous plaque psoriasis in neoplastic patients.
The study was carried out at the Dermatology Unit of Policlinico Tor Vergata in Rome, the Clinical Dermatology Unit of IRCCS IFO San Gallicano, the Dermatology Unit of Policlinico Gemelli in Rome, and the Dermatology Unit of Policlinico de l'Aquila. Seventeen patients were enrolled with a history of previous neoplasia or diagnosed with neoplasia within 6 months of starting Risankizumab therapy for moderate-severe psoriasis.
The inclusion criteria were age > 18 years, signing of informed consent, PASI > 10, previous malignancy or diagnosed with malignancy within 6 months of starting Risankizumab therapy and oncologic clearance to initiation or continuation of Risankizumab therapy.
The exclusion criteria were pregnancy or lactation, congenital or acquired immunodeficiency and the participation in other ongoing clinical trials.
The primary endpoints were to evaluate the safety of Risankizumab in terms of the absence of neoplastic progression or reactivation also evaluating specialized oncology consults and the efficacy of the drug against psoriatic disease in terms of PASI response and Dermatology Life Quality Index (DLQI) performance. The study population underwent clinical dermatological examination every 12 weeks, in which changes in the following clinic-metric parameters were assessed: Psoriasis Area and Severity Index (PASI), Dermatology Life Quality Index (DLQI) and the absence of neoplastic progression (blood chemistry tests, instrumental tests, oncology visits). All demographic, medical history, and clinicopathological data were tabulated. All data were analyzed by univariate descriptive and inferential statistical analysis.
Results are expressed as arithmetic mean ± (minimum-value maximum) or percentage depending on the nature of the variable analyzed.

Comparison in terms of reduction in PASI or other scores of interests at different time-points was analyzed by parametric test of variance (ANOVA), followed by Bonferroni's post-hoc test. Differences of $p<0.05$ are considered statistically significant.
All statistical analyses were performed using the statistical package SPSS27.0 (SPSS Incorporated, Chicago).

Results

Seventeen oncology patients with moderate-severe plaque psoriasis vulgaris treated with Risankizumab were enrolled, including 12 men and 5 women, aged 37 to 83 years (mean 66 years);
4 patients also had arthropathic psoriasis.
16 patients had been diagnosed with malignancy prior to initiation of Risankizumab therapy;
1 patient was diagnosed with cancer during Risankizumab therapy.
6 patients had a family history of psoriatic disease; 12 patients had one or more comorbidities: 6 patients had hypertension, 2 had diabetes, 3 had dyslipidemia, 2 had treated hepatitis B, 3 had treated TB, 2 had ischemic heart disease, 1 had chronic renal failure, 1 had benign prostatic hypertrophy, and 1 had Hashimoto's thyroiditis.
The histotype of neoplasm was for 1 patient GIST of the stomach, for 1 patient adenocarcinoma of the lung, for 2 patients ductal mammary adenocarcinoma, for 1 patient squamous carcinoma of the oro-farnygeal tonsil, for 2 patients adenocarcinoma of the colon, for 1 patient adenocarcinoma of the prostate, for 3 patients melanoma, for 1 patient pleomorphic adenoma of the parotid gland, for 2 patients papuliferous carcinoma of the thyroid gland, for 1 patient IPMN of the pancreas, for 1 patient clear cell carcinoma of the kidney, for 1 patient squamous cell carcinoma of the skin.
The grade of neoplasms was I for 11 patients, II in 3 patients, IV in 1 patient and N.A. in 2 patients.
The mean interval between neoplasm diagnosis and initiation of Risankizumab therapy is 36.68 months (3-208).
The mean duration of therapy is 17.65 months (3-45).
The mean PASI at baseline (T0) is 22 (10-37). PASI 100 response was achieved by 7 patients after 24 weeks of therapy (43%) and by 10 patients after 36 weeks (77% of the total population reaching 36 weeks of follow-up); at 48 weeks 10 of 11 patients achieved PASI 100 and 1 PASI 90, this response was maintained throughout the duration of follow-up (up to 180 weeks) and was statistically significant ANOVA ($p < 0.001$).
The mean DLQI at baseline (T0) was 18 (6-30) and the reduction in this index at the respective time-points was statistically significant ANOVA ($p < 0.003$).
No patients underwent progression of neoplastic disease during the corresponding follow-up period.
No adverse events were recorded.

Discussion

To date, European guidelines recommend considering the severity of psoriasis and the risk of worsening or recurrence of cancer (pre-cancer vs. low risk vs. high risk) for shared therapeutic decision-making. For patients with recent neoplasia, topical therapies, phototherapy (narrow-band UVB) and/or acitretin are recommended.
It is recommended that the decision to start immunosuppressive therapies, in psoriasis patients with a current or recent cancer diagnosis within the last five years, be discussed with oncologists on a case-by-case basis and a shared decision reached, respecting patient preferences.
In case of inadequate response to topical therapies, phototherapy (narrowband UVB) and/or acitretin, the use of methotrexate in psoriasis patients with a previous history of cancer is suggested.
It is suggested that apremilast may be used in psoriasis patients with a previous history of cancer, despite the lack of long-term experience, based on pathophysiological considerations on a case-by-case basis, including discussion with the oncology specialist.
It is suggested that cyclosporine should not be used in psoriasis patients with a previous history of cancer.
It is suggested that anti-TNF and ustekinumab can be used based on existing safety data, on a case-by-case basis, including discussion with the oncology specialist. It is suggested that anti-IL17 and anti-IL23 may be used in psoriasis patients with a previous history of cancer, despite the lack of long-term experience, based on pathophysiological considerations, on a case-by-case basis and in discussion with an oncologist[23].

Risankizumab is a highly effective and very safe inhibitor of interleukin

IL-23 evaluated in clinical trials and real-world experiences[24-26]. A recent study of evaluating drug survival at 24 months of treatment with anti-IL-23 and anti-IL-17 drugs showed that the highest cumulative probability of drug survival was recorded with Risankizumab, so we choose this drug our studies[27]. However, there is still a paucity of data regarding the use of these biotechnological drugs in psoriatic patients with concomitant history of neoplasms, so the aim of our article is to apport our experiences in this population of patients.

There is a lack of large studies including psoriatic patients with prior or concomitant neoplasia in clinical trials evaluating whether biologic drugs promoted neoplasia progression. There is debate about the risk of developing neoplasia and progression of neoplasia in patients with psoriasis treated with biologics.

The lack of extensive, long-term, large studies including patients with psoriasis to assess these risks makes it difficult to ascertain the safety profile of biologic therapy in these patients[28].

Cancer is a well-recognized comorbidity of psoriasis. In a recently published article, psoriasis patients also have an increased risk of developing cancers of the colorectum, kidney, larynx, liver, exophages, oral cavity, and pancreas. There are many potential causes of the association between psoriasis and cancer, but lifestyle-related exposure to carcinogens plays an important role.

Tobacco smoking, alcohol abuse, and cumulative exposure to sun/ultraviolet light are more prevalent in psoriasis patients, which partly explains the increased risk of lip, mouth, throat, lung, bladder, and non-melanoma skin cancers; in addition, obesity-highly prevalent in psoriasis patients-has been associated with a wide list of cancers, such as colorectal cancer.

The increased risk of cancer in patients with psoriatic disease could be related to the combination of the previously mentioned risk factors and systemic inflammation caused by psoriasis, resulting in the up-regulation of proinflammatory cytokines such as TNF-α, IL-1β, IL-12, IL-17, IL-22, and IL-2329.

In addition, chronic inflammation has been linked to activation of the transducer and activator of transcription signal 3 (STAT3) and nuclear factor-kappaB (NF-kB) pathway.

Both are considered essential for inflammation-mediated cancer development.

Protumorigenic cytokines such as IL-11, IL-17, IL-21, IL-22, IL-23 and IL-6 activate STAT3 transcription factors; NF-kB is activated by IL-17, IL-23, TNFα, IL-1 and IL-18. STAT3 and NF-kB lead to activation of anti-apoptotic genes in cancer cells[30]. IL-23p19 mRNA was found to be significantly upregulated in the vast majority of carcinoma samples from various organ types compared with adjacent normal tissue and Significant mRNA upregulation was observed for both IL-23 subunits, but not for the IL-12-specific p35 subunit. Expression of IL-17, a central cytokine in tumor angiogenesis, was also significantly elevated in human tumors, consistent with activation of IL-23-induced processes[31].

To date, the prospective study of 173 psoriatic patients by von Lumig et al. is the largest study to include patients with a previous history of cancer, although a small number of this type of patient was included and only complete information was available for 3 of them. No recurrences of solid tumors were observed in this study, and only one female patient with previous non-melanoma skin cancer manifested new basal cell carcinomas[32]. New experiences about the use of biologic drugs in patients with psoriasis are currently emerging in the literature.

A case series of 14 psoriatic patients was reported in which psoriasis was treated with biologic drugs in the presence of advanced cancers, such as 1 lung adenocarcinoma, 1 renal carcinoma, and 1 rectal adenocarcinoma. No recurrence or progression could be detected, but the occurrence of multiple NMSCs, 1 SCLC and myeloma was observed in 3 different patients[33].

Another article reported a large case series of 12 psoriatic patients with a previous and concomitant history of tumors treated with anti-IL17: only 2 patients went on to neoplastic progression, but these events were probably not related to the use of the biologic drugs[34].

In a case series 37 psoriatic patients with a previous diagnosis of neoplasia treated subsequently with biological drugs was recently reported in literature. Thirty-six patients had regular follow-ups, one of them progressed during treatment.

The progression was considered as a natural evolution of the patient's tumor, so the treatment with biologics was not interrupted[35].

A research group recently published their experience with biologic drug treatment in patients with psoriasis and with previous or intercurrent neoplasia. They included 31 adult patients with psoriasis and cancer; in 16 the diagnosis of cancer preceded the inception of biological treatment, and 9 of those patients were in remission.

Most malignancies arose in the genitourinary system, followed by breast, hematologic, colorectal, thyroid, and others. Anti-IL23p19 biologics were most frequently used (36%), followed by anti-TNF (32%), anti-IL -17 (16%) and anti-IL-12/23 (16%) agents. All patients showed improvement of psoriasis after biologic initiation[36].

Conclusions

The results of this retrospective analysis show that the treatment with risankizumab administered to patients with moderate-to-severe psoriasis and recent history of tumors, refractory to various therapies, was effective on the disease and safe for patients.

These benefits were sustained over several years of continuous treatment with risankizumab, which was well tolerated by most patients.

Over the course of treatment, no patients underwent progression of neoplastic disease during the corresponding follow-up period and no adverse events were recorded.

Long-term treatment of psoriatic disease with risankizumab in cancer patients appears therefore to be effective, well tolerated, and potentially favorable also in term management of oncological disease.

However, further studies are needed with a larger sample, stratifying patients by grade and type of neoplasm, to identify the class of cancer patients suitable to receive this type of treatment.

Inhibition of IL -23 could be beneficial for complex cancer patients due to its potential antineoplastic effect and could contribute to the healing or maintenance of remission of concomitant malignancy, therefore research must continue in this direction.

REFERENCES

1. Lebwohl M. Psoriasis. Lancet 2003;361:1197-204.

2. Christophers E. Psoriasis-epidemiology and clinical spectrum. Clin Exp Dermatol 2001;26:314-20.

3. Shon MP, Boehncke WH. Psoriasis.N Engl J Med 2005;352:1899-912.

4. Campione E, Cosio T, Di Prete M, Lanna C, Dattola A, Bianchi L. Experimental Pharmacological Management of Psoriasis. J Exp Pharmacol. 2021 Jul 26;13:725-737. doi: 10.2147/JEP.S265632. PMID: 34345187; PMCID: PMC8323855.

5. Chan TC, Hawkes JE, Krueger JG. Interleukin 23 in the skin: role in psoriasis pathogenesis and selective interleukin 23 blockade as treatment. Ther Adv Chronic Dis. 2018 May;9(5):111-119. doi: 10.1177/2040622318759282. PMID: 29796240; PMCID: PMC5956648.

6. Lee E, Trepicchio WL, Oestreicher JL, Pittman D et al. Increased expression of interleukin 23 p19 and p40 in lesional skin of patients with psoriasis vulgaris. J Exp Med 2004; 5; 199: 125-130.

7. Rendon A, SchaÃàkel K. Psoriasis Pathogenesis and Treatment. Int J Mol Sci. 2019 Mar 23;20(6):1475. doi: 10.3390/ijms20061475. PMID: 30909615; PMCID: PMC6471628.

8. Elder JT. Genome-wide association scan yields new insights into the immunopathogenesis of psoriasis. Genes Immun. 2009 Apr;10(3):201-9. doi: 10.1038/gene.2009.11. Epub 2009 Mar 5. PMID: 19262574; PMCID: PMC2683580

9. Tait Wojno ED, Hunter CA, Stumhofer JS. The Immunobiology of the Interleukin-12 Family: Room for Discovery. Immunity. 2019 Apr 16;50(4):851-870. doi: 10.1016/j.immuni.2019.03.011. PMID: 30995503; PMCID: PMC6472917.

10. Mirlekar B, Pylayeva-Gupta Y. IL-12 Family Cytokines in Cancer and Immunotherapy. Cancers (Basel). 2021 Jan 6;13(2):167. doi: 10.3390/cancers13020167. PMID: 33418929; PMCID: PMC7825035.

REFERENCES

11. Langowski JL, Zhang X, Wu L, Mattson JD, Chen T, Smith K, Basham B, McClanahan T, Kastelein RA, Oft M. IL-23 promotes tumour incidence and growth. Nature. 2006 Jul 27;442(7101):461-5. doi: 10.1038/nature04808. Epub 2006 May 10. PMID: 16688182.

12. Zhang J, Ji C, Li W, Mao Z, Shi Y, Shi H, Ji R, Qian H, Xu W, Zhang X. Tumor-Educated Neutrophils Activate Mesenchymal Stem Cells to Promote Gastric Cancer Growth and Metastasis. Front Cell Dev Biol. 2020 Aug 13;8:788. doi: 10.3389/fcell.2020.00788. PMID: 32903528; PMCID: PMC7438587.

13. Wu X, Yang T, Liu X, Guo JN, Xie T, Ding Y, Lin M, Yang H. IL-17 promotes tumor angiogenesis through Stat3 pathway mediated upregulation of VEGF in gastric cancer. Tumour Biol. 2016 Apr;37(4):5493-501. doi: 10.1007/s13277-015-4372-4. Epub 2015 Nov 13. PMID: 26566627.

14. Li J ZhangL,ZhangJ,WeiY,LiK,HuangL,ZhangS,GaoB,WangX,LinP. Interleukin 23 regulates proliferation of lung cancer cells in a concentration-dependent way in association with the interleukin-23 receptor. Carcinogenesis. 2013 Mar;34(3):658- 66. doi: 10.1093/carcin/bgs384. Epub 2012 Dec 17. PMID: 23250909.

15. Gangemi S, Minciullo P, Adamo B, Franchina T, Ricciardi GR, Ferraro M, Briguglio R, Toscano G, Saitta S, Adamo V. Clinical significance of circulating interleukin-23 as a prognostic factor in breast cancer patients. J Cell Biochem. 2012 Jun;113(6):2122-5. doi: 10.1002/jcb.24083. PMID: 22298331.

16. Li J, Lau G, Chen L, Yuan YF, Huang J, Luk JM, Xie D, Guan XY. Interleukin 23 promotes hepatocellular carcinoma metastasis via NF-kappa B induced matrix metalloproteinase 9 expression. PLoS One. 2012;7(9):e46264. doi: 10.1371/journal.pone.0046264. Epub 2012 Sep 25. PMID: 23050001; PMCID: PMC3457978.

17. Fukuda M, Ehara M, Suzuki S, Ohmori Y, Sakashita H. IL-23 promotes growth and proliferation in human squamous cell carcinoma of the oral cavity. Int J Oncol. 2010 Jun;36(6):1355-65. doi: 10.3892/ijo_00000620. PMID: 20428758.

18. Ljujic B, Radosavljevic G, Jovanovic I, Pavlovic S, Zdravkovic N, Milovanovic M, Acimovic L, Knezevic M, Bankovic D, Zdravkovic D, Arsenijevic N. Elevated serum level of IL-23 correlates with expression of VEGF in human colorectal carcinoma. Arch Med Res. 2010 Apr;41(3):182-9. doi: 10.1016/j.arcmed.2010.02.009. Epub 2010 Mar 19. PMID: 20682175.

19. Koh J, Kim HY, Lee Y, Park IK, Kang CH, Kim YT, Kim JE, Choi M, Lee WW, Jeon YK, Chung DH. IL23-Producing Human Lung Cancer Cells Promote Tumor Growth via Conversion of Innate Lymphoid Cell 1 (ILC1) into ILC3. Clin Cancer Res. 2019 Jul 1;25(13):4026-4037. doi: 10.1158/1078-0432.CCR-18-3458. Epub 2019 Apr 12. PMID: 30979738.

20. Calcinotto A, Spataro C, Zagato E, Di Mitri D, Gil V, Crespo M, De Bernardis G, Losa M, Mirenda M, Pasquini E, Rinaldi A, Sumanasuriya S, Lambros MB, Neeb A, LucianoÃÄ R, Bravi CA, Nava-Rodrigues D, Dolling D, Prayer-Galetti T, Ferreira A, Briganti A, Esposito A, Barry S, Yuan W, Sharp A, de Bono J, Alimonti A. IL-23 secreted by myeloid cells drives castration-resistant prostate cancer. Nature. 2018 Jul;559(7714):363-369. doi: 10.1038/s41586-018-0266-0. Epub 2018 Jun 27. PMID: 29950727; PMCID: PMC6461206.

21. A FuQ,XuL,WangY,JiangQ,LiuZ,ZhangJ,ZhouQ,ZengH,TongS,WangT,QiY, Hu B, Fu H, Xie H, Zhou L, Chang Y, Zhu Y, Dai B, Zhang W, Xu J. Tumor-associated Macrophage-derived Interleukin-23 Interlinks Kidney Cancer Glutamine Addiction with Immune Evasion. Eur Urol. 2019 May;75(5):752-763. doi: 10.1016/j.eururo.2018.09.030. Epub 2018 Oct 4. Erratum in: Eur Urol. 2023 Sep 23;: PMID: 30293904.

22. Nie W, Yu T, Sang Y, Gao X. Tumor-promoting effect of IL-23 in mammary cancer mediated by infiltration of M2 macrophages and neutrophils in tumor microenvironment. Biochem Biophys Res Commun. 2017 Jan 22;482(4):1400-1406. doi: 10.1016/j.bbrc.2016.12.048. Epub 2016 Dec 10. PMID: 27956175.

23. Nast A, Smith C, Spuls PI, Avila Valle G, Bata-CsoÃàrgoÃà Z, Boonen H, De Jong E, Garcia-Doval I, Gisondi P, Kaur-Knudsen D, Mahil S, MaÃàlkoÃànen T, Maul JT, Mburu S, Mrowietz U, Reich K, Remenyik E, R√∏nholt KM, Sator PG, Schmitt-Egenolf M, Sikora M, StroÃàmer K, Sundnes O, Trigos D, Van Der Kraaij G, Yawalkar N, Dressler C. EuroGuiDerm Guideline on the systemic treatment of Psoriasis vulgaris - Part 2: specific clinical and comorbid situations. J Eur Acad Dermatol Venereol. 2021 Feb;35(2):281-317. doi: 10.1111/jdv.16926. PMID: 33547728.

REFERENCES

24. Gordon KB, Strober B, Lebwohl M, et al. efficacy and safety of risankizumab in -to-severe plaque psoriasis (UltiMMa-1 and UltiMMa-2): results from two double-blind, randomised, placebo-controlled and ustekinumab-controlled phase 3 tri-als. Lancet. 2018;392(10148):650–661.

25. Gargiulo L, ibba L, Pavia G, et al. real-life effectiveness and safety of risankizumab in 131 patients affected by moderate-to-severe plaque psoriasis: a 52-week retrospective study. dermatol ther . 2022;12(10):2309–2324

26. Orsini D, Gargiulo L, Ibba L, Cascio Ingurgio R, Valenti M, Perugini C, Pacifico A, Maramao FS, Frascione P, Costanzo A, Narcisi A. Effectiveness of risankizumab in plaque psoriasis with involvement of difficult-to-treat areas: a real-world experience from two referral centers. J Dermatolog Treat. 2023 Dec;34(1):2220849. doi: 10.1080/09546634.2023.2220849. PMID: 37288760.

27. Torres T, Puig L, Vender R, Yeung J, Carrascosa JM, Piaserico S, Gisondi P, Lynde C, Ferreira P, Bastos PM, Dauden E, Leite L, Valerio J, Del AlcaÃÅzar-Viladomiu E, Rull EV, Llamas-Velasco M, Pirro F, Messina F, Bruni M, Licata G, Ricceri F, Nidegger A, Hugo J, Mufti A, Daponte AI, Teixeira L, Balato A, Romanelli M, Prignano F, Gkalpakiotis S, Conrad C, Lazaridou E, Rompoti N, Papoutsaki M, Nogueira M, Chiricozzi A. Drug Survival of Interleukin (IL),Äê17 and IL,Äê23 Inhibitors for the Treatment of Psoriasis: A Retrospective Multi,Äêcountry, Multicentric Cohort Study. Am J Clin Dermatol. 2022 Nov;23(6):891-904. doi: 10.1007/s40257-022-00722-y. Epub 2022 Aug 17. PMID: 35976568.

28. Patel, S., Patel, T., & Kerdel, F. A. (2016). The risk of malignancy or progression of existing malignancy in patients with psoriasis treated with biologics: case report and review of the literature. International Journal of Dermatology, 55(5), 487-493.

29. Loft ND, Vaengebjerg S, Skov L. Cancer risk in patients with psoriasis: should we be paying more attention? Expert Rev Clin Immunol. 2020 May;16(5):479-492. doi: 10.1080/1744666X.2020.1754194. Epub 2020 Apr 24. PMID: 32279582.

30. Gubernatorova, Ekaterina O., et al. "Dual role of TNF and LTŒ± in carcinogenesis as implicated by studies in mice." Cancers 13.8 (2021): 1775.

31. Langowski, John L., et al. "IL-23 promotes tumour incidence and growth." Nature 442.7101 (2006): 461-465.

32. van LuÃàmig PP, Driessen RJ, Berends MA, et al. Safety of treatment with biologics for psoriasis in daily practice: 5-year data. J Eur Acad Dermatol Venereol. 2012 Mar;26(3):283-91. doi: 10.1111/j.1468-3083.2011.04044.x. Epub 2011 Mar 24. PMID: 21435026.

33. Odorici G, Lasagni C, Bigi L, Pellacani G, Conti A. A real-life experience of psoriatic patients with history of cancer treated with biological drugs. J Eur Acad Dermatol Venereol. 2019 Dec;33(12):e453-e455. doi: 10.1111/jdv.15775. Epub 2019 Jul 16. PMID: 31281965

34. Bellinato F, Gisondi P, Maurelli M, Girolomoni G. IL-17A inhibitors in patients with chronic plaque psoriasis and history of malignancy: A case series with systematic literature review. Dermatol Ther. 2021 Mar;34(2):e14889. doi: 10.1111/dth.14889. Epub 2021 Feb 25. PMID: 33595861

35. Mastorino L, Dapavo P, Avallone G, Merli M, Cariti C, Rubatto M, Pala V, Quaglino P, Ribero S. Biologic treatment for psoriasis in cancer patients: should they still be considered forbidden? J Dermatolog Treat. 2022 Aug;33(5):2495-2502. doi: 10.1080/09546634.2021.1970706. Epub 2021 Aug 30. PMID: 34409918.

36. Lluís Rusiñol, Gemma Camiña-Conforto & Luis Puig (2022) Biologic treatment of psoriasis in oncologic patients, Expert Opinion on Biological Therapy, 22:12, 1567-1578, DOI: 10.1080/14712598.2022.2152322

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Tissue-Sparing Management of Recurrent Basal Cell Carcinoma Near a Tracheostomy Using CO_2 and Pulsed Dye Laser



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ABSTRACT

Background: *Basal cell carcinoma (BCC), particularly its superficial variant, is common in the elderly, and surgery is the treatment of choice. However, it can be burdensome in frail patients and in complex anatomical locations, such as the neck near a tracheostomy. Truly personalized, low-morbidity approaches are therefore necessary.*

Case report: *We describe an 84-year-old man with multiple pathologies and a permanent tracheostomy, affected by recurrent superficial BCC of the left laterocervical region, previously treated with two surgical excisions. Punch biopsy confirmed superficial basal cell carcinoma. Given the high surgical risk, the patient was treated on an outpatient basis with a combination of surgical CO_2 laser under local anesthesia, followed by pulsed dye laser (PDL) on the ablation bed and surrounding skin, with a second PDL session after 4 weeks.*

Results: *The course was uneventful, with almost complete re-epithelialization at 3–4 weeks, no significant complications, and a good cosmetic outcome. At 6-month clinical and dermatoscopic follow-up, no signs of local recurrence were observed.*

Conclusion: *In frail elderly patients with recurrent BCC of the neck who are not candidates for extensive repeat surgery, the combination of CO_2 laser and PDL may represent a potentially useful minimally invasive tissue-sparing option. Further studies and larger case series are needed to better define the role of this approach within therapeutic algorithms for basal cell carcinoma in frail patients. Integration with noninvasive imaging techniques could further improve selection and follow-up.*

KEYWORDS

BCC; Laser CO_2; Pulsed dye laser; Terapia tissue-sparing.

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INTRODUCTION

Basal cell carcinoma (BCC) is the most common skin malignancy in humans, typically occurring in older age and predominantly localized in sun-exposed areas. Although it has an extremely low metastatic potential, BCC is characterized by locally invasive and destructive growth which, in sites with poor healing, poses complex therapeutic challenges [1]. In patients who are frequently multipathological, the therapeutic choice must balance oncological control, procedural morbidity and preservation of function. Surgical excision still represents the reference treatment for most BCCs, ensuring high clearance rates [1][2]. However, repeated interventions in complex anatomical sites, such as the neck and peri-tracheostomy regions, can be technically difficult, carry a high anesthetic risk and lead to suboptimal functional and cosmetic outcomes in frail patients [1][2].

However, repeated interventions in complex anatomical sites, such as the neck and peri-tracheostomy regions, can be technically difficult, carry a high anesthetic risk and lead to suboptimal functional and cosmetic outcomes in frail patients [1][2].
In recent years, numerous tissue-sparing options have been developed, especially for superficial or low-risk BCC, including topical therapies (5-fluorouracil, imiquimod), cryotherapy, curettage and photodynamic therapy (PDT) [1][3].
Randomized trials and systematic reviews indicate that imiquimod or 5-fluorouracil can offer interesting response rates for superficial BCC, with a favorable cosmetic outcome, while for PDT the results confirm a good efficacy in non-infiltrating forms [2][3].
PDT, in particular, is now considered a consolidated option for multiple or extensive lesions, especially in elderly patients [3].
In parallel, ablative lasers, and in particular the superpulsed CO_2 laser, have proven effective in the treatment of small superficial and nodular BCCs, allowing precise ablation of the tumor tissue [4].
The use of CO_2 allows controlled ablation at adjustable depth, reducing thermal damage to healthy tissue and facilitating treatment in functionally delicate sites.
In this context, there has been a growing interest in combined laser protocols, in which CO_2 is combined with vascular lasers such as the pulsed dye laser (PDL).
In parallel, recent studies have explored integrating CO_2 laser with photodynamic therapy and non-invasive imaging techniques to optimize lesion selection and margin control [5] [6][7].
Experience gained on complex conditions has shown that the CO_2 + dye/PDL sequence allows for the association of precise debulking and vascular modulation, with good efficacy and an excellent cosmetic profile [8][9].
In light of these data, the combined use of CO_2 laser and PDL can be considered, in selected cases, a potentially useful minimally invasive strategy for the treatment of recurrent BCC in elderly patients at high surgical risk, particularly when the lesion involves cervico-facial areas close to a tracheostomy.
The aim of this paper is to present the case of a frail patient with recurrent superficial BCC of the neck treated with the combination of surgical CO_2 and PDL, discussing this approach in the context of tissue-sparing options.

Case presentation

An 84-year-old man, phototype II, presented to us with a recurrent skin lesion localized on the neck. [Fig. 1] The past medical history was significant for ischemic heart disease with previous myocardial infarction and coronary stent placement, atrial fibrillation on anticoagulant therapy, NYHA class III heart failure, severe chronic obstructive pulmonary disease on home oxygen therapy, arterial hypertension, and stage 3 chronic renal failure.
The patient had a permanent tracheostomy following previous laryngeal surgery, with no evidence of active oncological disease at the time of dermatological evaluation.



Fig.1: Erythematous lesion with fine telangiectasias and beaded edges on the left laterocervical region, near the tracheostomy.

The overall performance status was consistent with an ECOG 2, in a context of evident clinical frailty. From a cutaneous oncology perspective, the patient reported a history of basal cell carcinoma (BCC) in the left laterocervical region, previously treated with two surgical excisions over the past four years. In recent months, he had noticed the recurrence of a lesion in the same location, with a tendency to bleed spontaneously and mild pruritus, which prompted him to return to our attention.

Physical examination revealed an erythematous patch measuring approximately 18 × 15 mm, characterized by a slightly raised and pearly peripheral border, fine superficial telangiectasias, and a central area of de-epithelialization, located on the left laterocervical region a few centimeters from the edge of the tracheostomy.

The surrounding skin showed signs of chronic photodamage and previous surgical scars. Dermatoscopic examination revealed a pattern of fine arborizing vessels, maple leaf-like areas, and bluish-gray ovoid nests, consistent with a diagnosis of basal cell carcinoma.

To confirm the clinical suspicion, an incisional biopsy was performed using a 4-mm punch taken from the most representative area of the plaque. Histological examination documented nests of basaloid cells budding from the epidermis and extending into the papillary dermis, characterized by peripheral palisading of the nuclei and retraction artifacts (clefting) between the tumor nests and the stroma, the latter of which had a myxoid appearance. The findings were consistent with superficial basal cell carcinoma.

The case was discussed in a multidisciplinary dermatological setting, and given the patient's advanced age, cardiovascular and respiratory comorbidities, tracheostomy, and high anesthetic risk, it was deemed unsuitable for further wide surgical excision under general or regional anesthesia.

Furthermore, the anatomical location and history of recurrences suggested the need for a conservative approach.

In light of these considerations, it was decided to propose a combined treatment with surgical CO_2 laser and pulsed dye laser (PDL) under local anesthesia, on an outpatient basis. After infiltration of 1% lidocaine into the lesion and surrounding margins, the CO_2 laser (10,600 nm) was used in superpulsed mode, with a power of 2 W and a 1 mm spot size, performing tangential ablation of the tumor nests with a clinical margin of approximately 1–2 mm beyond the visible limits of the lesion.

The tissue was gently removed between passes until a clinically considered disease-free plane was reached; bleeding was controlled using the same CO_2 laser in coagulation mode. [**Fig. 2**]



Fig. 2 Appearance immediately after CO_2 laser ablation, with a well-defined bloody area.

In the same session, the ablation bed and surrounding skin were treated with PDL (595 nm), using a 7 mm spot, fluence of approximately 14 J/cm^2 pulse duration of 0.5 ms, and a single pass, extending 3–4 mm beyond the margins of the CO_2-treated area. A second PDL session with the same parameters was scheduled and performed 4 weeks later, with the aim of treating the residual cancerous field. Postoperatively, a non-adherent gauze dressing and antibiotic ointment were recommended for the first 5 days, followed by the application of a neutral emollient until complete re-epithelialization. Paracetamol was recommended as the first-line analgesic if needed. The patient reported mild, transient pain for the first 48 hours, well controlled with symptomatic therapy, without significant bleeding or signs of local infection. Four weeks after treatment, almost complete re-epithelialization of the area was observed, with residual erythema and a thin peripheral crust. At the 3-month follow-up, the laterocervical region appeared to be the site of a flat, slightly erythematous scar, soft to the touch, and well-integrated from an aesthetic point of view. (**Fig.3**)



Fig. 3 Intermediate course: re-epithelialization phase and subsequent flat, slightly erythematous scar, without clinical signs of recurrence.

At the 6-month clinical and dermatoscopic follow-up, no signs of local recurrence were evident; the scar appeared stable, without nodularity or suspicious areas, and the patient reported a high degree of satisfaction with both the aesthetic result and the absence of symptoms. [**Fig.4**]



Fig. 4 - 6-month follow-up: stable and barely visible scar, no local clinical recurrence

Discussion

The case described focuses on the increasingly frequent problem in clinical practice of managing recurrent basal cell carcinoma (BCC) in frail elderly patients with multiple comorbidities and unfavorable anatomical conditions. European guidelines for basal cell carcinoma reiterate that surgical excision generally represents the first-line treatment, ensuring high rates of local control [1]. However, in patients at high anesthesiological risk or with complex tumors, surgery can have a significant impact in terms of morbidity. In this context, several non-surgical or tissue-sparing strategies have been proposed for the treatment of BCC, especially in superficial variants, including topical imiquimod, cryotherapy, curettage, and photodynamic therapy (PDT).

Although these approaches may offer a good balance between efficacy and cosmetic outcome, they present specific limitations in the frail elderly patient: PDT, for example, is widely used, but reported recurrence rates for BCC may be higher than surgery, especially in non-superficial or recurrent lesions.

Ablative lasers and other energy sources are gaining an increasingly relevant role in the management of non-melanoma skin cancers.

The CO_2 laser, in particular, has been shown to be effective in the treatment of BCC, with high clearance rates in experienced hands, coupled with good bleeding control. However, the potential persistence of deep nests in hair follicles and the difficulty in histologically evaluating margins after ablation may represent a limitation, which is why the selection of the lesion (preferably superficial or thin nodular) is crucial [4][5].

The association between CO_2 and dye/PDL, described in the treatment of complex benign lesions, aims to combine the ablation of the neoplastic tissue with the vascular modulation of the perilesional stroma [10][11][12]. In the case presented here, the combination of surgical CO_2 and PDL allowed to obtain an adequate debulking of the recurrent BCC.

This approach allowed to avoid a new extended excision in a patient with high surgical risk, while achieving a good cosmetic result and the absence of clinical and dermatoscopic recurrence at 6 months.

The main limitations of this experience lie in the single-case design, the relatively short duration of follow-up and the absence of histological confirmation of complete clearance after treatment. Pending prospective studies, the combined CO_2 + PDL approach should be considered as a non-standard option, reserved for selected patients with superficial recurrent BCC, high surgical risk, and lesions located in complex areas.

Conclusions

In frail elderly patients with multiple comorbidities and recurrent lesions in complex anatomical sites, the treatment of basal cell carcinoma requires a personalized approach.

Experiences on special populations show that the management of non-melanoma skin cancer becomes complex when systemic fragility and cumulative risk of recurrence increase .The combination of CO_2 laser and pulsed dye laser adopted in the case described here is part of this evolutionary trajectory: CO_2 allows a targeted debulking of basaloid nests, while PDL acts on the vascular component, with the aim of maximizing local control while minimizing morbidity. The obtained result suggests that this strategy may represent a valid alternative to traditional surgery in selected cases of recurrent BCC in high-risk patients. In parallel, the development of non-invasive imaging techniques, such as advanced dermoscopy and confocal microscopy, is redefining the possibility of more finely assessing tumor margins [13][14].

It is likely that the integration of non-invasive diagnostics and combined laser protocols will allow a further qualitative leap in the conservative management of skin tumors in frail patients. Although this is a single case, this experience suggests that the combination of CO_2 + PDL can be considered a useful option in patients who are not candidates for further extensive excisions.

In this context, laser-based and energy-based protocols are emerging as flexible tools in dermatology, with progressive refinement of combined and sequential strategies [16]

Prospective studies will be needed to better define the indications and long-term results of this approach for the treatment of basal cell carcinoma.

REFERENCES

1. Peris K, Fargnoli MC, Kaufmann R, et al. European consensus-based interdisciplinary guideline for diagnosis and treatment of basal cell carcinoma-update 2023. Eur J Cancer. 2023;192:113254. doi:10.1016/j.ejca.2023.113254

2. Jansen MHE, Mosterd K, Arits AHMM, et al. Five-Year Results of a Randomized Controlled Trial Comparing Effectiveness of Photodynamic Therapy, Topical Imiquimod, and Topical 5-Fluorouracil in Patients with Superficial Basal Cell Carcinoma. J Invest Dermatol. 2018;138(3):527-533. doi:10.1016/j.jid.2017.09.033

3. Collier NJ, Rhodes LE. Photodynamic Therapy for Basal Cell Carcinoma: The Clinical Context for Future Research Priorities. Molecules. 2020; 25(22):5398. https://doi.org/10.3390/molecules25225398

4. Humphreys TR, Malhotra R, Scharf MJ, Marcus SM, Starkus L, Calegari K. Treatment of superficial basal cell carcinoma and squamous cell carcinoma in situ with a high-energy pulsed carbon dioxide laser. Arch Dermatol. 1998;134(10):1247-1252. doi:10.1001/archderm.134.10.1247

5. Hibler BP, Sierra H, Cordova M, et al. Carbon dioxide laser ablation of basal cell carcinoma with visual guidance by reflectance confocal microscopy: a proof-of-principle pilot study. Br J Dermatol. 2016;174(6):1359-1364. doi:10.1111/bjd.14414

6. Azzopardi EA, Whitaker IS, et al. Treatment of cutaneous basal cell carcinoma with combined carbon dioxide laser extirpation and methyl aminolevulinate photodynamic therapy: five-year outcomes. Ann R Coll Surg Engl. 2021;103(9):632–639

7. Alma A, Pongetti L, Clementi A, Chester J, Toccaceli M, Ciardo S, Zappia E, Manfredini M, Pellacani G, Greco M, et al. Combined Carbon Dioxide Laser with Photodynamic Therapy for Nodular Basal Cell Carcinoma Monitored by Reflectance Confocal Microscopy. Medicina. 2024; 60(1):30. https://doi.org/10.3390/medicina60010030

REFERENCES

8. Bonciani D, Morini C, Cannarozzo G. Combined Pulse Dye Laser with UltraPulse CO2 Laser for the Treatment of a Nodular Basal Cells Carcinoma of the Lower Eyelid. Clin Surg. 2018; 3: 2137.

9. Nisticò SP, Bennardo L, Sannino M, et al. Combined CO2 and dye laser technique in the treatment of outcomes due to flap necrosis after surgery for basal cell carcinoma on the nose. Lasers Surg Med. 2022;54(4):523-529. doi:10.1002/lsm.23502

10. Sannino M, Ambrosio AG, Lodi G, Cannarozzo G, Bennardo L, Nisticò SP. A giant epidermal nevus of the face treated with a CO2 and dye laser combination: a case report and literature review. J Cosmet Laser Ther. 2021;23(3-4):59-64. doi:10.1080/14764172.2021.1990962

11. Lodi G, Cannarozzo G, Fusco I, Zingoni T, Campione E, Sannino M. Effective Technique Using Combined CO2 Laser and Pulsed Dye Laser for Facial Angiofibromas Management in Tuberous Sclerosis. Case Rep Dermatol Med. 2024;2024:9775613. Published 2024 Sep 16. doi:10.1155/2024/9775613

12. Clementi A, Cannarozzo G, Amato S, Zappia E, Bennardo L, Michelini S, Morini C, Sannino M, Longo C, Nistico SP. Dye Laser Applications in Cosmetic Dermatology: Efficacy and Safety in Treating Vascular Lesions and Scars. Cosmetics. 2024; 11(6):227. https://doi.org/10.3390/cosmetics11060227

13. Malvehy J, Pellacani G. Dermoscopy, Confocal Microscopy and other Non-invasive Tools for the Diagnosis of Non-Melanoma Skin Cancers and Other Skin Conditions. Acta Derm Venereol. 2017;Suppl 218:22-30. doi:10.2340/00015555-2720

14. Ruini C, Schuh S, Gust C, et al. Line-field optical coherence tomography: in vivo diagnosis of basal cell carcinoma subtypes compared with histopathology. Clin Exp Dermatol. 2021;46(8):1471-1481. doi:10.1111/ced.14762

15. Clementi A, Cannarozzo G, Guarino L, Zappia E, Cassalia F, Alma A, Sannino M, Longo C, Nisticò SP. Sequential Fractional CO2 and 1540/1570 nm Lasers: A Narrative Review of Preclinical and Clinical Evidence. Journal of Clinical Medicine. 2025; 14(11):3867. https://doi.org/10.3390/jcm14113867

16. Clementi A, Cassalia F, Cannarozzo G, Guarino L, Zappia E, Bennardo L, Mazzetto R, Danese A, Longo C, Nisticò SP. Laser-Assisted Exosome Delivery (LAED) with Fractional CO2 Laser: A Pilot Two-Case Report and Narrative Review. Cosmetics. 2025; 12(5):199. https://doi.org/10.3390/cosmetics12050199

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From ancient times to a new iconic led device on the treatment of wrinkles and hyperpigmentation, combining two wavelengths: 630nm and 830nm.



Rita Bassi

Rita Bassi[1], Marta Serafino[2]

ABSTRACT

Background. *Photobiostimulation (PBM) is a non-invasive therapeutic approach to stimulate cellular function. Red light therapy triggers a cascade of cellular responses, including increased production of adenosine triphosphate (ATP), leading to improved cellular function and tissue repair. Additionally, red and NIR (near-infrared) light therapy has been shown to stimulate the production of collagen, elastin and the inhibition of collagenase, which is crucial in maintaining the structural integrity of the skin and other connective tissues. By promoting collagen synthesis, red and NIR light therapy offer various therapeutic indications: from photorejuvenation, reduction of wrinkles and improving skin texture, the healing of wounds and skin ulcers, up to immunological stimulation of the skin and anti-inflammatory and dyspigmentation properties.*

Objective. *The principal aim of the study is to evaluate the clinical efficacy and structural changes (thin and medium skin texture, fine lines and melanin concentration) in different skin variety after twelve combined 633-nm and 830-nm light-emitting diode (LED) treatments, two per week.*

Methods. *Fifteen subjects aged between 35 and 75, Fitzpatrick skin type II-IV with signs of skin aging, wrinkles, fine lines and hyperpigmentation in the periorbital and nasolabial region and those presenting Glogau scale photodamage grade II–III received twelve 20-min duration light treatments using the Déesse PRO® LED Phototherapy Mask. The treatments combined wavelengths of 633nm and 830nm. The images acquired with Antera 3D® (Miravex), at treatments 1, 6 and 12, allowed us to analyse standard skin colour, relief, texture and wrinkle maps, and skin maps concentration of haemoglobin and melanin, with 2D and 3D perspective representation, for each patient.*

Results. *After twelve treatments, the skin is softer and smoother, with a significant reduction in fine wrinkles, pigmentation, freckles and small vascular lesions.*

Conclusion. *Results observed confirm that using led phototherapy can reverse the visible signs of aging and dyspigmentation. Application times are short-stay and all skin types can be treated. The skin does not suffer thermal trauma, pain or side effects. Precisely for this reason, the patients' compliance was optimally, and the treatments absolutely tolerated. Finally, led phototherapy can be integrated with traditional aesthetic treatments to enhance and increase the result.*

KEYWORDS

photobiomodulation, light therapy, led phototeraphy, skin rejuvenation, pigmentation, non-ablative treatment, aging, Déesse pro led phototeraphy mask

INTRODUCTION

The use of light as a therapeutic approach dates to ancient times. Ancient Egyptians, Chinese, and Indian populations recognized the benefits of sunlight for various health conditions. However, the scientific foundation for phototherapy began to take shape in the early 20th century (1).

Nobel laureate Niels Finsen played a pivotal role in modern phototherapy.

Finsen developed a "chemical rays" lamp to treat patients with skin tuberculosis and lupus vulgaris (1893 d.C.). His groundbreaking work laid the groundwork for the use of light in medical treatments.

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In the early 1900s, Oscar Raab and Herman von Tappeiner coined the term "photodynamic therapy" (PDT). In 1903, von Tappeiner and Jesionek combined light with a topical substance (eosin) to treat skin tumours for the first time (2).
From that moment on, Dermatology has been a major beneficiary of PDT due to the accessibility of the skin for light exposure and topical applications. Light-emitting diode (LED)-based devices have emerged as a safe and effective tool for treating skin and hair conditions (3). These devices emit specific wavelengths of light, which can penetrate the skin and stimulate cellular processes. In particular, LED therapy is used to manage conditions like acne, psoriasis, and eczema; promotes collagen production, improving skin texture and reducing fine lines (4).
Dermatologists now commonly incorporate LED therapy into their treatment protocols, but recent scientific studies have confirmed that photostimulation, due to its ability to push cellular metabolism, has found applications also in others various medical fields, including endocrinology, neurosurgery and dentistry. Ongoing research continues to validate its efficacy.
The principal aim of this study is to evaluate the clinical efficacy and structural changes (thin and medium skin texture, fine lines and melanin concentration) in different skin variety after twelve combined 633-nm and 830-nm light-emitting diode (LED) treatments, two per week, using the Déesse PRO® LED Phototherapy Mask.

2 | RED and NIR SKIN BENEFITS

LED therapy, also known as light-emitting diode therapy, is a non-invasive treatment that utilizes specific wavelengths of light to stimulate cellular processes in the skin.
LED devices emit light at specific wavelengths, typically in the visible or near-infrared spectrum. Different wavelengths have varying effects on skin cells and tissues. When applied to the skin, the LED light penetrates the epidermis and reaches the dermis.
The depth of penetration depends on the wavelength used. Once absorbed by skin cells, the light energy activates cellular processes. Specific wavelengths target different cellular components, for example:

- Red Light (630-700 nm): Stimulates fibroblasts, which produce collagen and elastin, enhances wound healing and reduces inflammation.
- Near-Infrared (NIR) Light (800-1000 nm): Penetrates deeper into tissues, boosts blood circulation and promotes tissue repair.

LED therapy triggers various biological responses, such as: increased ATP production, improve skin elasticity and texture and promote healing.
Dermatologists use LED therapy mainly for [**Fig. 1**]:

- Acne Treatment: Blue light destroys acne bacteria (Propionibacterium Acnes).
- Anti-Aging: Red light stimulates collagen and reduces wrinkles.
- Wound Healing: Red and NIR accelerates tissue repair.
- Hair Growth: NIR light may enhance hair follicle function.

Red light therapy and NIR light therapy are fascinating modalities that harness the power of specific wavelengths of light to benefit our cells. Red and Near-Infrared wavelengths stimulate above all the mitochondria of fibroblast cells within the dermis.
This leads to visible rejuvenation of skin texture, tone, and appearance. Fibroblast cells are responsible for forming the connective tissue that maintains the skin's structural framework.
Let's explore how the wavelengths works.

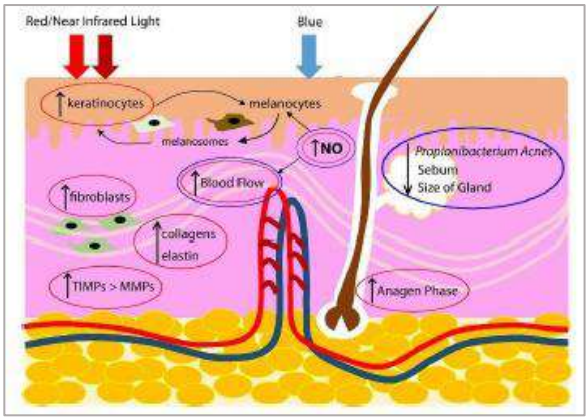


Fig. 1 - Biochemical and cellular effects of skin stimulation with red, NIR and blue wavelengths (7).

The most well-studied mechanism revolves around increased mitochondrial energy production within our cells. Mitochondria, often referred to as cell energy generators, play a crucial role in generating energy stored as adenosine triphosphate (ATP). When exposed to red and NIR light, mitochondria become more efficient at producing ATP.
A key player in this process is cytochrome c oxidase (CCO), a fundamental protein in the respiratory electron transport chain.
Red and NIR light are absorbed by CCO.
This additional light energy allows CCO to dissociate from Nitric Oxide (NO). As a result, ATP production is upregulated (5).

Not only that, but it must also be emphasized that the accumulation of ROS in the mitochondria causes a slowdown in the production of ATP as they cause an increase in viscosity within the mitochondrion. The absorption of NIR light by water (EZ water) sweeps away ROS, decreasing viscosity, and bringing ATP production back to normal.
Water, therefore, turns out to be a chromophore for photobiostimulation (6).
The enhanced ATP synthesis triggered by red and NIR light leads to several beneficial effects:
- Improved ATP levels contribute to tissue healing and repair.
- Light exposure influences gene expression, impacting cellular processes.
- Red and NIR light may generate signalling molecules that regulate cellular functions.

Therefore, photobiostimulation process involves the absorption of photons by mitochondria and this reflects on cellular energy, a better oxygen utilization and reduced oxidative stress/cellular damage.
Reason, red and near-infrared light therapy provides a gentle yet powerful boost to our cellular energy factories, promoting healing, rejuvenation, and overall well-being (7).

3 | MATERIAL AND METHODS

3.1 | Tested device

The tested mask is the Déesse PRO® LED Phototherapy Mask by Harpar Grace International (HGI). HGI are specialists in the development, distribution and management of science-backed skincare and wellbeing brands.
The Déesse Pro® mask consists of 770 leds, provides six targeted treatment modes using four wavelengths of light, red, NIR, blue and green (630nm, 830nm, 415nm, 520nm) plus two combined wavelengths (purple and cyan).
The maximum energy emitted by the mask is 20 Watt with a power density of 30 mW/cm² or 60 mW/cm² or 90mW/cm² depending on whether one, two or three wavelengths are active and the mask usage time. It is currently one of the most powerful cosmetological mask device on the market and can define a protocol on the skin for a duration of 20 -30 min, without any risk to health thanks to the quality of LEDs used (NASA technologies).
The MHRA (Medicines & Healthcare Regulation Agency) classifies treatment with LEDs as class 1, in terms of potential eye damage.
Class 1 is considered safe, so it is not necessary to provide protective glasses, but the Déesse Pro® provides them for greater patient comfort.

3.1.1 | Subjects

The study involved fifteen healthy women volunteers, between 35 and 75 years of age [**Fig. 2**], with signs of skin aging (Grade II-III wrinkles according to Glogau, lack of tone, roughness of the skin, etc.), phototype II-III (Fitzpatrick scale).
The patients had not undergone any other type of treatment in the last six months and had no current therapy.

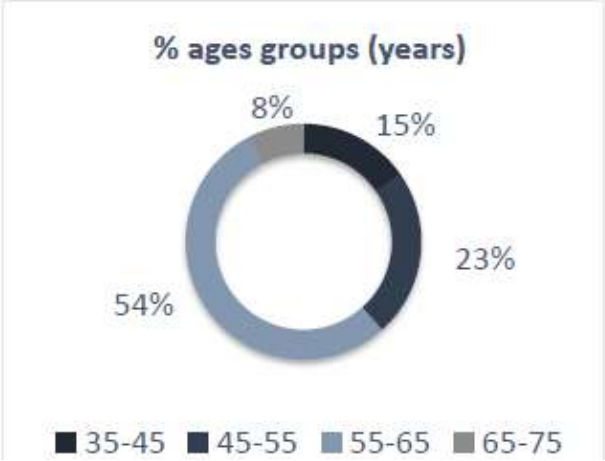


Fig. 2 - Age breakdown of the cohort of patients treated.

All participants were informed of the purpose of the study and signed an informed consent form including image rights.

3.2 | Protocol

To evaluate the effectiveness of the Déesse Pro® mask we evaluated the results using the Antera 3D® system (Miravex).
The patients included in the clinical study were offered and performed the anti-aging treatment with the Déesse Pro® Mask, activating the 630nm and 830nm wavelengths simultaneously, for 20 minutes, after cleansing the face with micellar cleansing water.
The protocol involves a series of two sessions per week, for a total of 12 treatments.

The images acquired with Antera 3D®, at treatments 1, 6 and 12, allowed us to examine standard skin colour, relief, texture and wrinkle maps, and haemoglobin and melanin concentration maps, with 2D and 3D perspective representation.
The quantitative "before and after" analysis was conducted by selecting specific areas of the face, in particular the periocular and nasolabial areas.
The patients' compliance was excellent and the treatment was very well tolerated. No side effects in any of the patients. Throughout the study, the subjects keep their usual skin-care, cleansing products and make-up products.

3.2.1 | Statistics analysis
The two-tailed Student's t test for paired data is performed as well as the weighted average of the improvement percentage, calculated on the entire surface taken into consideration.
For all statistical tests, an alpha risk of 5% is used (significance < 0).

4 | RESULTS

The clinical study shows excellent dermatological tolerance and antiaging effectiveness of the Déesse Pro® mask after 12 treatments in 6 weeks.
Particularly, objectively measured data showed significant reductions in:

✓ Roughness less than 1.5mm:
- 22%, p-value 0,004 [**Fig. 3**]

✓ Roughness less than 2.5mm:
- 20%, p-value 0,002 [**Fig. 4**]

✓ Melanin concentration:
- 11%, p-value < 0,05 [**Fig. 5**]

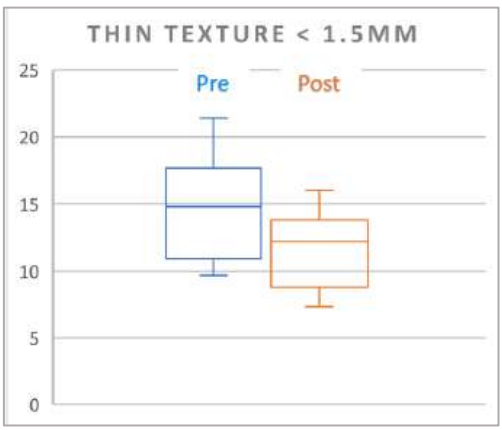


Fig. 3 – Significant improvement in roughness less than 1.5mm, evident in post-treatment.

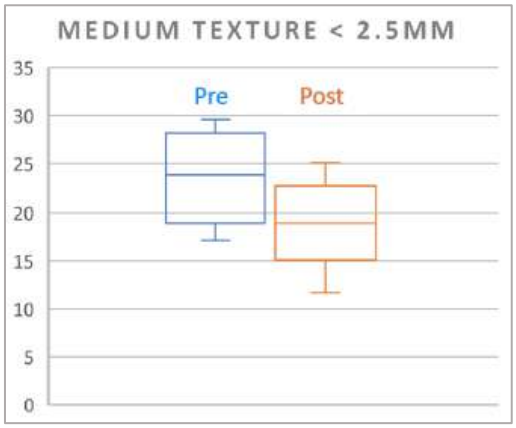


Fig. 4 - Significant improvement in roughness less than 2.5mm, evident in post-treatment.

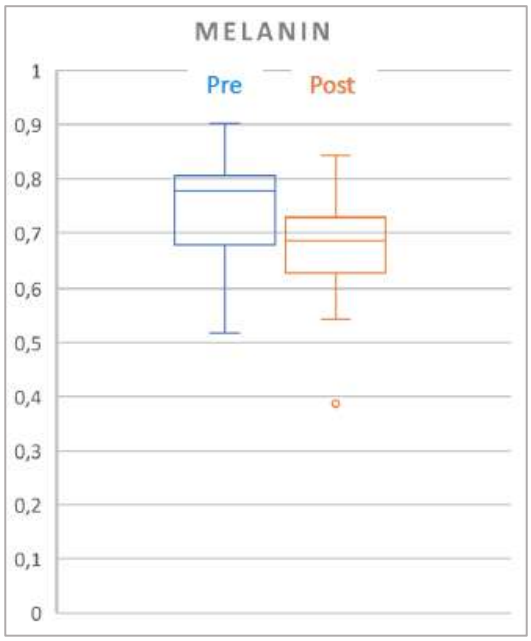


Fig. 5 – Significant improvement in average melanin levels per mm² of treated skin, evident in post-treatment.

For additional images captured with Antera 3D and related data analysed, please see Appendix 1.

5| DISCUSSION

Light-emitting diode (LED)-based devices represent the emerging and safest devices for treating many inflammatory skin and aging conditions and they entered in widespread practice among Dermatologists, Trichologists, Aesthetic Doctors and Plastic Surgeons.
LED devices are NON-ablative, do not develop heat and are not harmful to the skin and tissues.
No pain, swelling or peeling, reported with other laser therapies.

The biological effects of LEDs are strongly influenced by the wavelength used and the clinical protocol. The possibility of acting on different parameters makes LED therapy highly versatile and adaptable for the treatment of various skin pathologies. Among the fundamental parameters for obtaining tangible results is the optimal clinical intensity, estimated at approximately 50-100 mW/cm² (8). The effects on skin biophysiology range from changes in cell proliferation/differentiation/ migration, reduced inflammation and collagen production (9).

The objective evaluation of skin texture and the concentration uniformity of skin chromophores provide important indications on the response to medical and cosmetic treatments and are therefore of significant importance for dermatological research.

Regarding the Déesse Pro® mask, the number of LED therapy sessions required can vary based on individual needs and the specific condition being treated. However, here are general guidelines.

For mild to moderate acne, a series of 8 to 12 sessions is often recommended for the first month, followed by one per week. Severe acne may require multiple sessions. To improve skin texture, reduce wrinkles, and enhance collagen production, a typical regimen includes 10 to 12 sessions per month, followed by one per week. Maintenance sessions every two per months can help sustain results.

Regardless of the type of treatment, after the initial treatment phase, periodic maintenance sessions can help maintain results. Clearly, we must always remember that to LED therapy can vary, so it's essential to follow the most effective protocol, prioritize safety and consistency for the best outcomes. Evaluating each Antera 3D® images, skin colour, relief, texture and wrinkle maps, and skin maps concentration of haemoglobin and melanin improvement in fifteen patients was observed. Results achieved with only 12 treatments of 20 minutes each.

6 | CONCLUSION

LED phototherapy has proven to be a revolutionary technology with significant impact in various fields of Medicine.

The Red and Near-Infrared wavelengths have been shown to trigger biological processes leading to numerous therapeutic benefits.

LED phototherapy has proven to be particularly effective in reducing wrinkles and spots, improving the appearance of the skin, and contributing to a healthier, younger look.

This makes it a valuable technology not only in dermatology, but also in plastic surgery and dermo-cosmetology.

Furthermore, the use of LED phototherapy in Medicine is continually expanding, with new applications being discovered regularly.

This underscores the potential of this technology to further improve patient care in the future.

Recent research has provided some interesting insights into LED phototherapy

A review article published in 2022 discusses the effects of light-emitting diodes (LEDs) on cell biology (10). The article suggests that LEDs are considered a substitute for low-power lasers in phototherapy protocols. They enable photobiomodulation on biological tissues and are considered safe and economical. Another comprehensive review on photobiomodulation highlights the mechanisms of action underlying PBM, including the interaction with cellular chromophores and the activation of intracellular signaling pathways (11).

The review also discusses advancements in PBM technology, such as novel light sources and treatment protocols, in the context of optimizing therapeutic outcomes and improving patient care.

Research has found that certain wavelengths of light within the blue, red, and infrared bands can be beneficial to living tissue.

The light triggers the release of nitric oxide from blood vessels and red blood cells, causing local vasodilation that lasts several hours after the therapy session has ended (12).

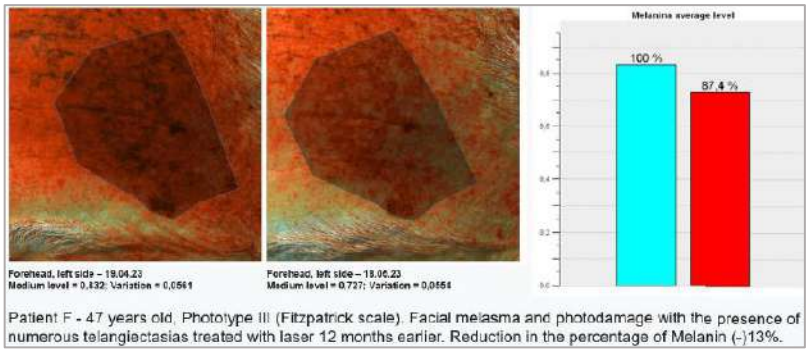
These findings underscore the promising role of LED phototherapy as a non-invasive therapeutic approach with broad clinical applicability.

Moreover, what has been highlighted with the continuous and constant use of the Déesse Pro® Mask is that results can be obtained very quickly thanks to the power of the proximity of the LEDs to the skin.

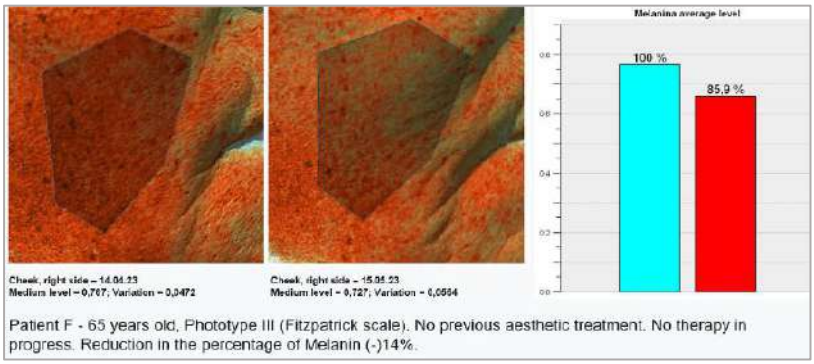
Completely cleansed skin allows the light to effectively penetrate the various layers and stimulate its cellular and molecular targets, even more so if the LEDs are almost in contact with the skin itself.

Certainly, further research is needed to develop standard protocols and fully understand the biological mechanisms underlying the effects of LED phototherapy, and the use of each wavelength and/or the combination thereof.

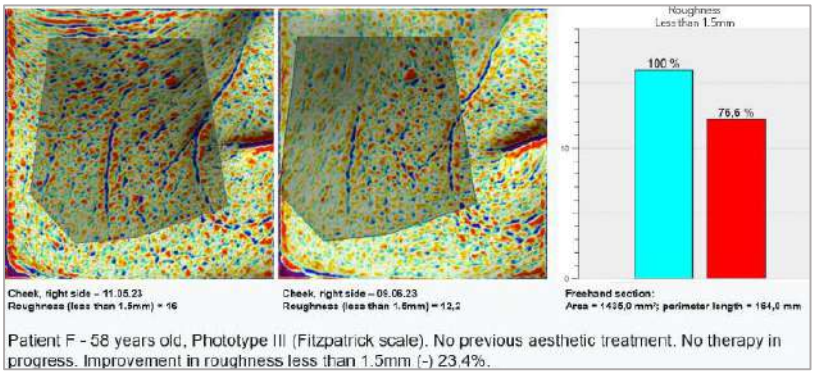
APPENDIX 1



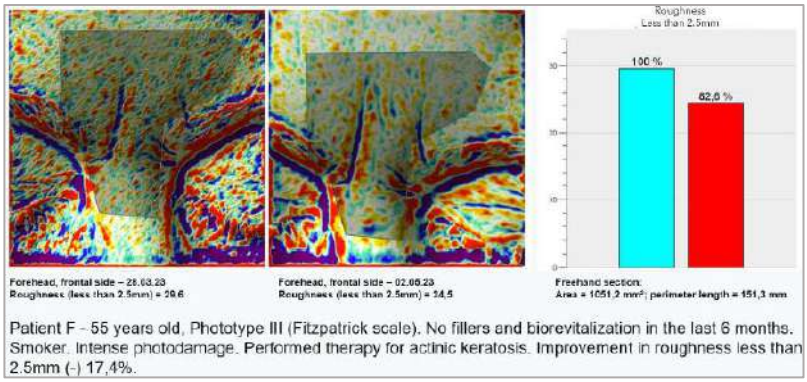
Patient F - 47 years old, Phototype III (Fitzpatrick scale). Facial melasma and photodamage with the presence of numerous telangiectasias treated with laser 12 months earlier. Reduction in the percentage of Melanin (-)13%.



Patient F - 65 years old, Phototype III (Fitzpatrick scale). No previous aesthetic treatment. No therapy in progress. Reduction in the percentage of Melanin (-)14%.



Patient F - 58 years old, Phototype III (Fitzpatrick scale). No previous aesthetic treatment. No therapy in progress. Improvement in roughness less than 1.5mm (-) 23,4%.



Patient F - 55 years old, Phototype III (Fitzpatrick scale). No fillers and biorevitalization in the last 6 months. Smoker. Intense photodamage. Performed therapy for actinic keratosis. Improvement in roughness less than 2.5mm (-) 17,4%.

REFERENCES

1. *Light-Emitting Diode Phototherapy in Dermatological Practice | R. Glen Calderhead | Lasers in Dermatology and Medicine, 2012 SpringerLink*

2. *History of phototherapy in dermatology |Herbert Hönigsmann |Photochemical & Photobiological Sciences, 2013 RSC Publishing | DOI: 10.1039/c2pp25120e*

3. *Phototherapy as a Treatment for Dermatological Diseases, Cancer, Aesthetic Dermatologic Conditions and Allergenic Rhinitis in Adult and Paediatric Medicine | Roy Kennedy |Life, 2023 https://doi.org/10.3390/life13010196*

4. *Photodynamic and photobiological effects of light-emitting diode (LED) therapy in dermatological disease: an update | E. Sorbellini, M. Rucco, F. Rinaldi | Lasers in Medical Science, 2018 |https://doi.org/10.1007/s10103-018-2584-8*

5. *Proposed Mechanisms of Photobiomodulation or Low-Level Light Therapy | L. F. de Freitas, M. R. Hamblin | IEEE J Sel Top Quantum Electron, 2017 | doi: 10.1109/JSTQE.2016.2561201*

6. *Aging is a sticky business | A. P. Sommer | Photomed Laser Surg., 2018 | doi: 10.1089/pho.2017.4393*

7. *Photobiomodulation: A review of the molecular evidence for low level light therapy | Graeme E. Glass | Journal of Plastic, Reconstructive & Aesthetic Surgery 74, 2021 | http://dx.doi.org/10.1016/j.bjps.2020. 12.059*

8. *Photodynamic and photobiological effects of light-emitting diode (LED) therapy in dermatological disease: an update | Lasers in Medical Science (2018) 33:1431–1439*

9. *Light-Emitting Diodes in Dermatology: A Systematic Review of Randomized Controlled Trials | Jared Jagdeo, et all. |Lasers in Surgery and Medicine, 2018 | doi: 10.1002/lsm.22791*

10. *Effects of light-emitting diodes on cell biology | T. M. Veloso, A da Fonseca, G. Costa dos Santos | Front. Photonics, 2022|https://doi.org/10.3389/fphot.2 022.1018773*

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Fast clinical response in a patient treated with bimekizumab



Lucia Finistauri Guacci

Lucia Finistauri Guacci[1], Luca Guarino[1], Giulio Bortone[1], Elena Zappia[1], Steven Paul Nisticò[1], Annunziata Dattola[1]

ABSTRACT

Background: *Bimekizumab, a dual IL-17A/IL-17F inhibitor, has demonstrated rapid and significant skin clearance in clinical trials and real-world studies, including patients with high disease burden.*

Case presentation: *We report the case of a 60-year-old man with multiple cardiovascular and metabolic comorbidities who initially presented with predominantly guttate psoriasis on the trunk and limbs, with limited chronic plaques on the elbows and scalp. Within a few weeks, the patient experienced a rapid worsening of cutaneous involvement, with confluent erythematous and finely scaly lesions affecting most body areas and leading to a Psoriasis Area and Severity Index (PASI) score of 60, with marked impairment of quality of life. Given the severity and instability of the disease and the patient's comorbid profile, bimekizumab 320 mg subcutaneously was initiated according to the approved induction regimen (weeks 0, 4, 8, 12 and 16), followed by maintenance every eight weeks. The patient achieved PASI 90 at week 4 and complete skin clearance (PASI 100) at week 8, with stable disease control and maintenance of PASI 100 through week 52, without serious adverse events or treatment discontinuation.*

Conclusion: *This case illustrates the rapid onset of action and sustained efficacy of bimekizumab in a patient with psoriasis evolving from guttate to severe, near-erythrodermic involvement. The rapid induction of PASI 90/100 and long-term maintenance of complete clearance are consistent with recent real-world evidence and support the use of dual IL-17A/IL-17F inhibition as an effective and well-tolerated therapeutic option in selected patients with unstable, high-burden psoriasis who require rapid control.*

KEYWORDS

Bimekizumab; Psoriasis; Guttate psoriasis; Severe psoriasis; IL-17A/IL-17F inhibition

INTRODUCTION

Psoriasis is a chronic immune-mediated dermatosis in which the IL-23/IL-17 axis plays a central pathogenic role. IL-23, produced primarily by activated dendritic cells, promotes differentiation and maintenance of Th17 lymphocytes, which secrete IL-17A, IL-17F and IL-22, leading to keratinocyte hyperproliferation, impaired differentiation, and amplification of cutaneous inflammation.[1]

Both IL-17A and IL-17F contribute significantly to psoriatic inflammation: despite sharing downstream signalling pathways, IL-17F may be present at higher tissue concentrations and synergizes with IL-17A in driving keratinocyte activation and pro-inflammatory gene expression.[2]

Bimekizumab is a humanized IgG1 monoclonal antibody that selectively and simultaneously neutralizes IL-17A, IL-17F, and the IL-17A/F heterodimer, thereby preventing ligand binding to the IL-17RA/IL-17RC receptor complex and inhibiting downstream NF-κB and MAPK inflammatory pathways.

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This dual inhibition provides a more comprehensive suppression of inflammation than selective IL-17A blockade alone. In vitro studies show decreased keratinocyte activation, reduced chemokine and antimicrobial peptide production, and reduced neutrophil recruitment, effectively disrupting the pathogenic cascade that drives psoriatic plaque formation. [3]

Clinically, dual IL-17A/F inhibition translates into rapid therapeutic responses, with high rates of PASI 90 and PASI 100 and sustained disease control during long-term treatment.[4] Recent real-world evidence corroborates these findings.

The 52-week multicenter Lazio experience demonstrated a reduction in mean PASI from 14.41 at baseline to 0.18 at week 52, with high rates of PASI 100 across different and sensitive body sites, confirming both rapid and sustained efficacy in routine practice [5].

Likewise, the IL-PSO multicenter Italian study showed rapid improvements, with significant proportions of patients achieving PASI 90/100 early during treatment and maintaining response over time [6].

Furthermore, recent short-term real-life data indicate that a substantial subset of patients may qualify as "super responders," achieving PASI 100 as early as week 4, highlighting the exceptional rapidity of action of Bimekizumab in real-world clinical practice[7].

Additional evidence of rapid clinical improvement has also been reported in sensitive and highly visible areas: in a 2024 case series, Bimekizumab induced a prompt and marked response in facial psoriasis, further supporting its ability to achieve rapid clearance even in challenging anatomical sites [8].

In this report, we present the case of a 60-year-old patient who experienced a rapid progression from guttate psoriasis to erythrodermic psoriasis and achieved early and sustained complete disease clearance following initiation of Bimekizumab.

Case presentation

A 60-year-old hispanic patient presented to our attention with guttate psoriasis and psoriatic plaques localized on the elbows and scalp.

His medical history includes a cerebellar stroke, persistent atrial fibrillation, systemic arterial hypertension, microcytic anemia, dyslipidemia, and type II diabetes mellitus.

During the initial dermatologic consultation, blood tests were performed—including TAS, VES, PCR, complete blood count, and infectious-disease screening— due to the possibility to start biological treatment.

The baseline clinical picture revealed numerous millimetric erythematous- scaly papules scattered across the trunk and proximal limbs, consistent with a diagnosis of guttate psoriasis. (**Fig.1**).



Fig. 1: Numerous millimetric erythematous-scaly papules diffusely scattered over the trunk and proximal limbs, consistent with an acute guttate psoriatic eruption.

At the follow-up visit, 4 weeks later, a marked worsening of the cutaneous condition was observed, consistent with erythrodermic psoriasis (**Fig.2**) with a BSA greater than 20% and a PASI score of 42. Among the blood tests performed, TAS was negative.



Fig. 2: Generalized erythema with diffuse scaling involving >80% of the body surface, with accentuation on the trunk and extremities, indicative of erythrodermic psoriasis.

Considering the severity of the condition, our idea was to start biological treatment with a rapid onset of action, especially in view of the erythrodermic presentation.
Accordingly, treatment with Bimekizumab was initiated at a dose of 320 mg subcutaneously at weeks 0, 4, 8, 12, and 16, followed by administration every eight weeks. Our therapeutic choice was guided by data from phase III studies (BE READY, BE VIVID) demonstrating both speed and efficacy in achieving PASI 90/100, owing to the dual inhibition of IL-17A and IL-17F—an approach proven to effectively control even those forms characterized by marked cutaneous and systemic inflammation.
The patient showed a rapid clinical improvement from the first week, attaining PASI 90 by week 4 (**Fig. 3**) and PASI 100 (**Fig. 4**) by week 8, with sustained response maintained through week 52.



Fig. 3: Marked reduction of erythema and desquamation with residual faint erythematous patches; near-complete clearance of previously involved areas, corresponding to PASI 90



Fig. 4: Complete resolution of psoriatic lesions with normalized skin texture and absence of erythema or scaling, consistent with PASI 100

Discussion

This case underscores a "double rapidity": the unusually fast worsening of psoriasis and the equally rapid response to treatment.
The patient evolved in a few weeks from a predominantly guttate phenotype to a severe, near-erythrodermic picture with PASI 60, reflecting an unstable disease phase in which the inflammatory cascade is suddenly amplified.
In this setting, the clinical priority is not only achieving PASI 90/100 but doing so quickly to reduce the risk of systemic complications, hospitalisation and further deterioration in quality of life. Bimekizumab, through dual IL-17A/IL-17F inhibition, is particularly suited to this need for speed.
Phase III trials have already shown very high PASI 90/100 rates with early onset, and multiple Italian real-life experiences have confirmed that these results translate into routine practice, with a substantial proportion of patients reaching complete clearance within the first weeks of therapy and maintaining it at one year.[5]
The choice of bimekizumab was also driven by the patient's comorbidity profile. In older or comorbid patients, conventional systemic agents such as ciclosporin or methotrexate may be limited by nephrotoxicity, hepatotoxicity, drug–drug interactions and cardiovascular risk, whereas IL-17/IL-23 inhibitors offer a more favourable risk–benefit balance when appropriately monitored.
Real-world data on bimekizumab in elderly patients support good efficacy and tolerability in this fragile population [6] and broader IL-PSO analyses highlight the cumulative clinical benefit and drug survival of modern biologics in moderate-to-severe psoriasis, emphasising the need for personalised selection based on disease pattern, comorbidities and treatment goals.[7]

Conclusions

This case illustrates the exceptional rapidity and depth of clinical response that Bimekizumab can offer, even in a patient presenting with an unstable and severe phenotype such as erythrodermic psoriasis. The achievement of PASI 90 by week 4 and complete clearance (PASI 100) by week 8 mirrors the early responses described in real-world cohorts, including the IL-PSO study and the Lazio 52-week multicenter experience, where rapid and substantial efficacy was consistently observed [8,6].
Moreover, the sustained PASI 100 response through week 52 aligns with long-term real-world data demonstrating the durability of Bimekizumab and the existence of "super responder" profiles capable of maintaining full clearance for extended periods [8].

The speed of response observed in this case is also consistent with evidence from a recent case series showing early and significant improvement of facial psoriasis under Bimekizumab, further reinforcing its fast therapeutic effect across sensitive areas [9].
Overall, this case reinforces the role of Bimekizumab as a highly effective therapeutic option for moderate-to-severe psoriasis, particularly in scenarios requiring a rapid onset of action and stable, long-term disease control.[10]

Its ability to rapidly induce and maintain complete clearance supports the use of Bimekizumab in severe or rapidly progressing presentations, including erythrodermic psoriasis.
Of course, a single observation cannot define practice standards, but it aligns well with emerging real-world evidence and supports considering dual IL-17A/IL-17F inhibition as a front-line option in carefully selected unstable cases

REFERENCES

1. *Lowes MA, Suárez-Fariñas M, Krueger JG. Immunology of psoriasis. Annu Rev Immunol. 2014;32:227-255.*

2. *Liang SC, Tan XY, Luxenberg DP, et al. Interleukin (IL)-22 and IL-17A synergistically induce pro-inflammatory responses. J Exp Med. 2010;207:295–304.*

3. *Chiricozzi A, Guttman-Yassky E, Suárez-Fariñas M, et al. IL-17 pathway in psoriasis: mechanisms and therapeutic implications. Int J Mol Sci. 2023;24(12):10305.*

4. *Clinical review of IL-17 inhibitors for psoriasis. NIH/PMC.*

5. *Dattola A, Bernardini N, Campione E, Amore E, Amato S, Caldarola G, et al. Evaluating the Efficacy of Bimekizumab across the Different Sensitive Areas in Moderate-to-Severe Psoriasis: A 52-week Italian Multicenter Real-Life Lazio Experience. Dermatol Pract Concept. 2025;15(2):4976. PMID: 40228172.*

6. *Orsini D, Megna M, Assorgi C, et al. Efficacy and Safety of bimekizumab in elderly patients: real-world multicenter retrospective study - IL PSO (Italian Landscape Psoriasis). J Dermatolog Treat. 2024;35(1):2393376. doi:10.1080/09546634.2024.2393376*

7. *Orsini D, Potestio L, Fargnoli MC, et al. Cumulative clinical benefits of biologic treatments in patients with moderate-to-severe psoriasis: an Italian real-life experience - IL PSO (Italian Landscape Psoriasis). Clin Exp Dermatol. Published online November 1, 2025. doi:10.1093/ced/llaf486*

8. *Gargiulo L, Narcisi A, Ibba L, Balato A, Bianchi L, Brianti P, et al. Effectiveness and safety of bimekizumab for the treatment of plaque psoriasis: a real-life multicenter study – IL PSO. Front Med. 2023;10:1243843. PMID: 37614958.*

9. *Esposito M, Gisondi P, Assorgi C, Bellinato F, Brianti P, Burlando M, et al. Super Responder Profile Under Bimekizumab Treatment in Moderate-to-Severe Psoriasis: A Short Term Real-Life Observation – IL PSO. Clin Drug Investig. 2025;45(6):309-315. PMID:40372625.*

10. *Bernardini N, Dattola A, Caldarola G, Orsini D, Assorgi C, D'Amore A, et al. Rapid response on facial psoriasis to bimekizumab: case series. Drugs Context. 2024;13:2024-1-4. PMID: 38817804.*

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