

RECOMMENDATIONS

- Further studies with a larger group of patients and longer follow up would be useful to determine the optimal treatment approach of fractional ablative CO₂ laser treatment in darker phototypes.
- An objective scale for evaluation of photoaging improvement, need to be set.
- Combination of Fractional CO₂ laser with other modalities is recommended in treatment of photoaging.

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APPENDIX

Laser devices technical specifications and parameters used.

Device	Study and skin types	Delivery Method	Pulse Duration	Energy output (joule/Watts)	Spot size	Parameters used in study
ATL 250 CO2		scanned	0.1ms-10ms	25W max	≤0.5mm	4-6 W, 3-4 ms, PPI 4
Deka SmartXide DOT	Tierney and Hanke ⁽²⁶⁹⁾ (I-III)	Scanned	0.2ms-2ms	30W max	120µm	30W and 500 µm pitch for 1,000 to 1,500 µs
Fraxel repair	Hunzeker et al. ⁽²⁷²⁾	IOTS* continuous motion delivery system	0.15-3ms	Upto 70mJ/MTZ	Less than 140µm spot size	40 mJ to 70 mJ and coverage density of 30% to 60
	Chan et al. ⁽²⁷⁰⁾ (III-VI)					30– 70mJ coverage 30% - 45% and 4 passes
Ultrapulse encore (Active Fx)	Neaman et al. ⁽²⁵²⁾ (I-IV +oneV)	scanned	Less than 1ms	1-225mJ	1.3mm	70-150mJ, density 3-6, frequency 75 - 500Hz, 2-3 passes
	Kee Lee Tan et al ⁽²⁷¹⁾ (IV-V)					60 mJ energy and density 1(60% coverage)

* Intelligent optical tracking system

الملخص العربي

- تعد شيخوخة الجلد ظاهرة بيولوجية معقدة حيث يتأثر الجلد بنوعين من الشيخوخة مختلفتان تماماً عن بعضهما البعض لكنهما يحدثان معا في وقت واحد. النوع الأول هو الشيخوخة الداخلية والنوع الثاني هو الشيخوخة الخارجية وهي الناتجة عن التعرض للعوامل الخارجية وعلى رأسها الأشعة فوق بنفسجية التي تصدرها الشمس (التشيخ الضوئي). ويمكن التفريق بوضوح بين النوعين اكلينيكياً وهستولوجياً.
- يظهر التشيخ الضوئي على الجلد في صور عديدة تشمل الخشونة، التجاعيد، اللون الشاحب، وتوسع الشعريات، والتصبغات غير نظامية، ومجموعة متنوعة من الاورام الحميدة والخبيثة على عكس الجلد المتأثر بالتشيخ الداخلي فقط، والذي يكون فيه الجلد ناعماً ولا يبدو عليه هذا المظهر المتهلل.
- المران الأدمى هو أهم ما يميز التشيخ الضوئي هستولوجياً.
- الحماية الفسيولوجية للجلد من أشعة الشمس تتناسب طردياً مع سمك الطبقة القرنية من الجلد ودرجة تصبغ الجلد.
- بعض المركبات الطبيعية تم استخلاصها من النباتات وخلصاتها لعلاج اعراض التشيخ الضوئي لكنها لاتزال تحتاج الى المزيد من الدراسة.
- الالمام بتقسيم فيتزباتريك لنوع الجلد حسب استجابته لضوء الشمس هام جداً في اثناء فحص حالات التشيخ الضوئي لأنه على أساسه يتحدد نوع العلاج وحجم مخاطره بالنسبة لكل مريض.
- التدخل الطبي في حالات التشيخ الضوئي يمكن تقسيمه الى ثلاثة مراحل:
- مرحلة وقائية من الدرجة الاولى (تقلل من حدوث التشيخ الضوئي): وتشمل الوقاية من اشعة الشمس بكافة صورته.
- مرحلة علاجية / وقائية من الدرجة الثانية (تقلل من آثار التشيخ الضوئي): وتشمل مشتقات فيتامين أ الموضعية.
- مرحلة علاجية / وقائية من الدرجة الثالثة (تخفف حدة الآثار الناتجة عن التشيخ الداخلي والتشيخ الضوئي): وتشمل علاجات أمثال: سم الوشيقية (البوتبولينيم)، الملئ بالأنسجة الرخوة، التقشير الكيميائي، وتقشير الجلد بالليزر وغيرها.
- شعاع الليزر الكربوني (ثاني أكسيد الكربون) يقع ضمن طيف الاشعة تحت الحمراء وطوله الموجي هو ١٠٦٠٠ نانومتر.
- يستخدم الليزر الكربوني المجزأ بشكل واسع في تجميل الجلد خاصة في علاج الندبات الناتجة عن حب الشباب والتجاعيد لكن استخداماته في الامراض الجلدية بشكل عام لاتزال تحتاج الى المزيد من البحث.
- المضاعفات الناتجة عن تقشير الجلد بالليزر المجزأ يمكن تقسيمها وفق شدتها إلى بسيط، معتدل، شديد.
- تعد مشاكل التصبغ العرض الجانبي اللافت للاهتمام في علاج ذوي البشرات الداكنة.
- يجب على الطبيب المعالج والمريض اتباع المبادئ التوجيهية الخاصة باختيار المريض المناسب، والتقييم السابق للعلاج والرعاية ما بعد العلاج لتجنب أي مضاعفات قد تنشأ عن استخدام الليزر الكربوني المجزأ.
- في الدراسة المقدمة كانت عينة الدراسة ٥٠ مريضاً يعانون من التشيخ الضوئي. وكان كلهم من الاناث واللون الضوئي لبشراتهم ما بين II و VI وفقاً لتقسيم فيتزباتريك. تم اختيار المرضى من العيادة الخارجية لقسم الجلدية والتناسلية بالمستشفى الجامعي بكلية الطب جامعة الاسكندرية. كانت أعمار المرضى ما بين ٢٩ و ٤٦ وكان متوسط عمر المرضى ٤٦.٤ ± ٨.٧٩. كان ٣٦% من المرضى لديهم وظائف ثابتة و ٥٢% لا يعملون.
- تم عمل ٣ جلسات تقشير لكل مريض باستخدام جهاز الليزر الكربوني المجزأ (ATL-250) وكانت القوة المستخدمة ما بين ٦-٤ والوقت ما بين ٣-٤ وكثافة التجزؤ ما بين ٣-٤.
- بملاحظة درجة التحسن الحادثة بعد الجلسات الثلاثة، فانه علينا اعادة النظر في استخدام الليزر الكربوني المجزأ في علاج التشيخ الضوئي في ذوي البشرة الضوئية من II-IV مقارنة بأنواع العلاج الأخرى.
- وبملاحظة المضاعفات الحادثة للمرضى بعد الجلسات، يتضح أن استخدام الليزر الكربوني المجزأ آمن في ذوي البشرة الضوئية من II-IV.
- المزيد من الدراسات باستخدام مجموعات أكبر من المرضى ولفترات متابعة أطول ستساعد بشكل أكبر لوضع رؤية أوضح لعلاج التشيخ الضوئي في ذوي البشرة الضوئية من II-IV.

إقرار

أقر أنه لا يوجد أى جزء من هذا العمل قد سبق تقديمه لنيل درجة أخرى فى هذا المعهد أو أى جامعة أو مؤسسة تعليمية أخرى.

اسم الطالب:

توقيعه:



جامعة الإسكندرية
كلية الطب
قسم الأمراض الجلدية والتناسلية وطب الذكورة

تقييم استخدام الليزر الكربوني المتجزئ في علاج تلف الجلد الشمسي

رسالة مقدمة

لقسم الأمراض الجلدية والتناسلية وطب الذكورة - كلية الطب - جامعة الإسكندرية
ضمن متطلبات درجة

الماجستير

فى

الأمراض الجلدية والتناسلية وطب الذكورة

من

سلمى حسن زكي محمد مسعود
بكالوريوس الطب والجراحة، ٢٠٠٧
كلية الطب، جامعة الإسكندرية

[٢٠١٥]



جامعة الإسكندرية
كلية الطب
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التوقيع

لجنة المناقشة والحكم على الرسالة

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