Original Article

Use of laser and other technologies by Brazilian Society of Dermatology members

Pesquisa sobre o uso de lasers e outras tecnologias pelos associados da Sociedade Brasileira de Dermatologia

ABSTRACT

Introduction: An online questionnaire on the use of lasers and other technologies for treating cutaneous disorders or unattractive conditions was sent to 6517 members of the Brazilian Society of Dermatology.

Objective: To quantify the use of those technologies by dermatologists by region, in order to identify regional needs in Brazil.

Methods: The survey included 17 questions about the devices, relating to topics such as the place of application, ownership or rental equipment status, number of devices used, indications and types, and the member's region. The respondents used the Society's website to submit answers between February and March 2011. The answers were coded in graphs with percentages.

Results: The response rate was 859: 68% of Brazilian dermatologists perform the procedures at their private offices, 32% are owners of the equipment and 80% live in the southeast / south of Brazil.

Conclusions: While some results met the expectations -the Brazilian Southeast region had the greatest number of dermatologists who answered the questionnaire and use the technologies in question-, others were surprising -variety of equipment used-. This survey allowed the Brazilian Society of Dermatology to analyze how Brazilian dermatologists employ those devices, as well as the geographical locations that have a greater need for their use.

Keywords: lasers; statistical analysis; dermatology.

RESUMO

Introdução: *Utilizou-se um questionário online para os 6517 associados da Sociedade Brasileira de Dermatologia contendo perguntas sobre a utilização de lasers e outras tecnologias no tratamento de doenças cutâneas ou alterações inestéticas.*

Objetivo: *Quantificar o uso destas tecnologias pelos dermatologistas, em cada região do Brasil e identificar as carências regionais.*

Métodos: *Foram elaboradas 17 questões a respeito de: local de utilização do aparelho, relação de propriedade com o equipamento, número e tipo de aparelhos utilizados, indicações clínicas e região do país à qual pertence o associado. O site da Sociedade Brasileira de Dermatologia foi usado como veículo por dois meses (fevereiro e março- 2011), sendo as respostas codificadas em gráficos com percentagens.*

Resultados: *Entre os 859 dermatologistas brasileiros que responderam ao questionário 68% utilizam os aparelhos em suas clínicas privadas, 32% são proprietários e 80% habitam nas regiões Sudeste/Sul do país.*

Conclusões: *Alguns dados foram surpreendentes como a variedade de aparelhos utilizados enquanto outros corresponderam à expectativa (concentração maior na região Sudeste). Com este mapeamento, a Sociedade Brasileira de Dermatologia pôde detectar como e onde os dermatologistas brasileiros utilizam este tipo de tecnologia, com a finalidade de auxiliar a difundir o seu uso em regiões de maior carência.*

Palavras-chave: *lasers; análise estatística; dermatologia.*

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INTRODUCTION

The Brazilian Society of Dermatology (SBD) currently has 6,517 members (99.2% are Brazilians) distributed across the five main geographic regions of Brazil: North region (2.8%), Northeast region (13.2%), Midwest region (7%), Southeast region (63%) and South region (14%). According to a survey recently conducted by the SBD, 73% of its members use the SBD's website (Graph 1). SBD's organizational structure comprises, among others, 21 scientific departments that congregate members according to their specific areas of interest. SBD's Laser Department was founded in 2003 and has been providing training in and promoting laser techniques around Brazil through conferences, courses and workshops. The interest of Brazilian dermatologists in using lasers and other technologies has grown exponentially in the past decade, and SBD's Board of Directors (2011-2012 term), in conjunction with SBD Laser Department's coordinators, conducted an Internet survey to better understand how dermatologists use lasers in their daily practice in the five main regions of Brazil. The study intended to detect how, where and what devices are being used in each region and, based on this information, develop strategies to expand access to these technologies. Never before has such an encompassing survey been conducted, meaning little was known about the data to be compiled.

METHODS

SBD developed 17 questions and requested members to answer them via the Internet. The questions were available for 60 days in the member physicians' access area on the Society's website and covered the following topics:

1 - Place where the appliance is used: private practice/elsewhere/both

2 - Ownership: owned or rented equipment

3 - Number of devices used

4 - Indications: laser hair removal, treatment of pigmented and vascular lesions, rejuvenation, sagging, cellulite or striae

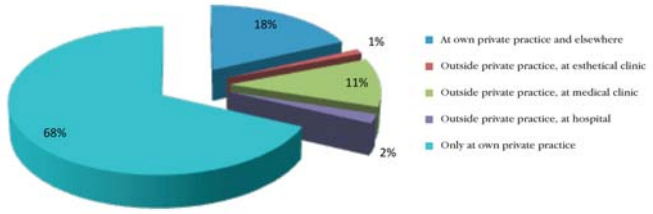
5 – Types of devices: intense pulsed light (IPL), fractional and non-fractional ablative CO_2 lasers, fractional non-ablative Erbium laser, YAG laser, Q-Switched laser, radiofrequency, infrared, radiofrequency combined with laser therapy/light emitting diode (LED)/IPL for body treatment and ultrasonic lipolysis.

The data captured were tabulated on Excel (Windows) and translated into percentage graphs.

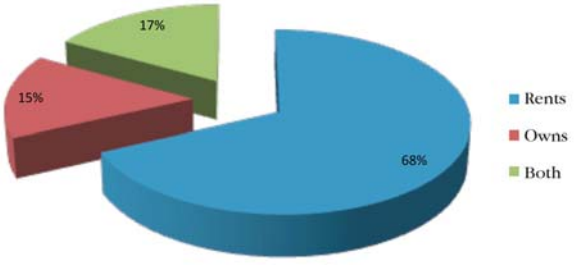
RESULTS

Of the 6,517 SBD members, 859 answered the questionnaire. Of those, 68% reported using laser equipment at his or her own private clinic (Figure 2). Regarding ownership, 17% own laser equipment, 68% rent the devices and 15% meet the two criteria (Figure 3). Regarding the types of devices used, 29% reported using at least two devices, and 26% use 3 (Figure 4). Concerning the geographic distribution of users, 65% are in the Southeast region, 15% in the South region, 11% in the Northeast region, 7% in the Midwest region, and only 2% are in the North region (Graph 5).

The preferred laser for hair removal is the diode laser (27%). Notwithstanding the fact that technically adequate devices were mentioned in the questionnaire, 55% use devices that were not included in the survey.

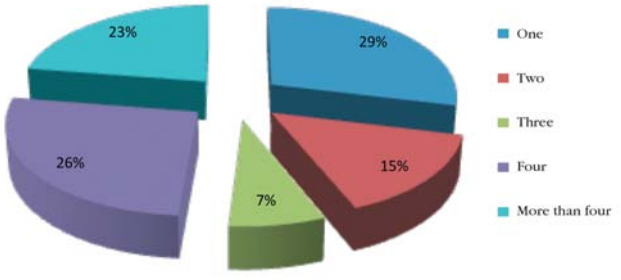


Graph 2 – Place where laser and other technology-based treatments are performed

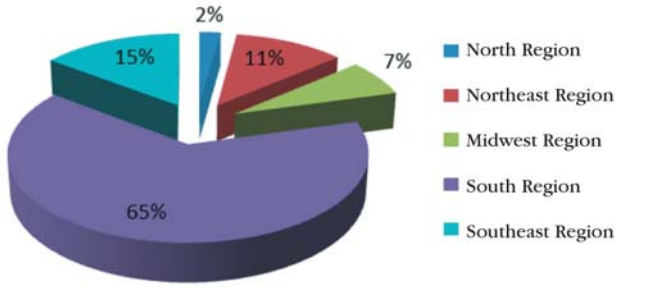


Graph 3 – Equipment ownership

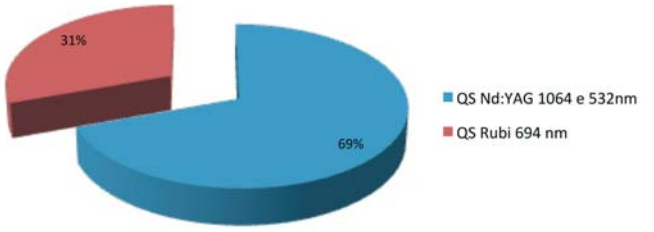
Graph 1 - Number of SBD members who use the Society's website



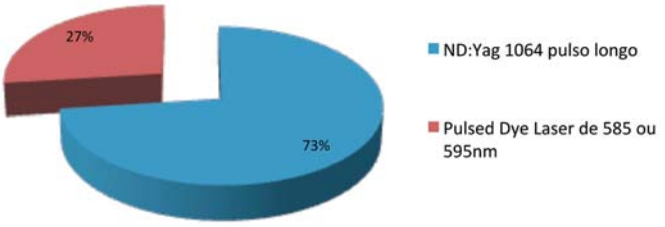
Graph 4 - Number of devices used per member



Graph 5 – Respondents by region



Graph 6 – Laser preference in the removal of pigments/tattoos



Graph 7 - Laser preference in the treatment of vascular lesions

Most respondents use the most advanced generation IPL devices, with cooling mechanisms and square pulse (smooth pulse), however a small percentage still use first- or second-generation devices (multiple pulses and non-cooling tip).

Non-fractional CO_2 lasers (conventional ablative) are not used frequently by dermatologists in Brazil. Regarding fractional ablative lasers, there is a large group using the 2,940 nm Erbium (29%), yet large, first-generation CO_2 lasers (with microbeams only) are more commonly used. Use of fractional non-ablative lasers was almost equally distributed between the 1,550 nm (47%) and the 1,540 nm (42%) types. For the removal of melanocytic pigment, 65% use 532 nm and 1,064 nm QS Nd:Yag lasers, and 31% use the 694 nm QS Ruby laser (Figure 6). To treat vascular lesions, 73% use the 1,064 nm Nd:YAG long pulse laser and 27% use the 585 nm or 595 nm pulsed dye laser (Figure 7). There was no response option on the questionnaire for those who only use pulsed light for this purpose. The most commonly used types of radiofrequency (RF) are: monopolar + bipolar (59%), tripolar(25%), and monopolar with costly consumables (14%). Regarding infrared appliances (IR) to treat facial flaccidity, there was an almost equal distribution among all types, including those of costly consumables. For treating body flaccidity, the vast majority (69%) prefer and use devices that combine technologies, such as RF + IR + Diode or LED, usually combined with skin suction. The remaining respondents use simple technologies – IR or RF, in isolation. Regarding ultrasonic lipolysis, there was also a balanced distribution of devices. For treating striae, most respondents (37%) use fractional CO_2 laser, 18% use 1,550 nm, 16% use IPL, 14% use 1,540 nm and 2% use 1,440 nm.

DISCUSSION

Although not specifically designed for the same purposes as the present study, some similar surveys have been conducted in other countries. [1-5] Granted, given the pace of technological change and physicians' frequent shifting among devices and technologies, surveys on this subject have a limited utility. Nonetheless, the present study captures a particular and important point in time.

Another limitation of this survey was the small number of questions. Since the results of other surveys show that the more questions there are on an Internet questionnaire, the lower the response rate, we decided to design a short survey.

Considering that many physicians do not use laser technologies, and that not all would be interested in answering the questionnaire, the number of responses (859 out of 6,517 SBD members) was considered relevant. The survey failed to ask whether the respondent used lasers and other technologies for treating cutaneous alterations. That was an important question that would have given more meaning to the proportion 859/6,517 in the context of our objectives.

This study is more of a reference, given that the trends underpinning these technologies frequently change. These changes require a certain amount of time to adjust, since the dermatologist's experience consolidates gradually with each particular device. In other words, when a dermatologist acquires experience with a particular device, the trend is for its long-term use. However, technological developments almost oblige physicians to swiftly move on to new equipment.

Several factors lead professionals to use specific devices: the cost (to acquire), efficiency, degree of security, and availability of adequate maintenance services. In the case of rentals, although there is more operational complexity for the physician, the replacement of equipment for newer versions is more straightforward.

One particularly relevant finding from this study is that 68% of the respondents perform procedures in their own private surgery, and 32% own their equipment. Although laser centers are available, where dermatologists can choose among different technologies and perform procedures, the large number of procedures carried out at physicians' own private practices seems to be explained by the convenience (for both the physician and the patient) of not having to travel to those centers.

Another interesting fact is that the majority of the respondents use fractional CO_2 lasers to treat striae, even though using

this technology to treat that condition was only suggested very recently in the literature 6 – especially when compared to the recommendation to use fractional non-ablative lasers, which have been available for over 5 years, and have proven to be effective.[7] Could this finding suggest that the media is influencing dermatologists' choice of technologies?

A further relevant fact is that 29% of the respondents use more than one device, and 15% use more than four in their treatments. This can be considered a positive development for dermatology in Brazil; although no similar surveys have been carried out in this country, laser procedures were much more restricted in the recent past.

Regarding laser use by region, the results confirmed the perception that the Southeast – which has the highest concentration of dermatologists in the country – dominates the use of these and other technologies. Nevertheless, it was extremely important to assess the percentages of use of the different technologies in each region (Figure 5), since training in laser procedures may become part of the official national medical dermatologic residency program. The SBD will need to provide support for the accredited medical training services in this field.

We believe this study is useful for encouraging the spread of knowledge in this area of interest of Brazilian dermatology, and will serve as a reference for comparison with future surveys.

CONCLUSIONS

The study achieved its objective by mapping the use of lasers and other technologies by Brazilian dermatologists who are members of SBD. Further studies should build on the current analysis to assess the process and speed of technological developments and how Brazilian dermatologists make use of them. ●

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