

Beliefs & Perceptions about Laser Hair Removal Amongst Students of a Private Medical College in Islamabad

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Background: It was hypothesized that misconceptions prevail amongst undergraduate medical students about laser hair removal.

Objectives: To determine the extent of misconceptions about laser hair removal amongst undergraduate medical students.

Methods: The students of Foundation University Medical College of the first four year classes were included in the study. These students completed a specially designed questionnaire.

Results: A total of three hundred and forty five students participated in the study. The age range was from 17-21 years. The male to female ratio was 1:1.75. With respect to the side effects of laser hair removal, 72% believed that laser treatment is harmful to skin, 68% believed that laser treatment causes skin cancers, 64% believed that laser treatment causes eye damage and 10% believed that laser treatment is extremely painful. On the issue of laser hair removal, 19% believed that laser treatment involves the use of a fine needle, 84% believed that laser hair removal is more effective than waxing of hair, 48% suggested that white hair can also be treated by laser, 11% suggested that laser hair removal involves a single treatment session and 9% suggested that laser hair removal alone is sufficient in a female with irregular menstrual cycle.

Conclusions: Misconceptions about laser hair removal prevail amongst our undergraduate medical students. An education program on laser hair removal is needed to improve their knowledge about this therapeutic option.

Key Words: laser, misconceptions, laser hair removal.

Despite an apparent lack of a vital function of hair in humans, the psychological importance of hair is significant. Growth of facial and body hair in excess of what is deemed culturally acceptable can be a source of distress. Especially in women, excessive facial hair leads to psychosocial problems such as anxiety, depression and reduced quality of life.¹ In the past century, unwanted hair has been treated with various techniques including plucking, waxing, shaving, depilatory creams. These methods were slow, tedious, painful or impractical and had poor long term efficacy. Consequently, there has been a demand for a reliable, safe and rapid technique of hair removal. In the last decade, laser hair removal has become the fastest growing procedure in modern cosmetic dermatology² but misconceptions still prevail about this novel therapeutic option.

The present study was designed to determine the extent of myths and perceptions about laser hair removal amongst adolescents and young adults. For this purpose we selected the students of Foundation University Medical College, Islamabad.

Subjects and Methods

Students of the Foundation University Medical College, from first year to fourth year class were enrolled in the study. All the students were included in the study. The Final year students were excluded as Dermatology is taught to this class.

A specially designed questionnaire was designed after extensive discussions and was pre-tested before final administration on the students. The questionnaire (Table 1) addressed two issues; laser hair removal and its side effects.

The questionnaire was filled in by the students of each class in their regular lecture schedule for other subjects and it was presented unannounced to them. They were asked to answer all questions, independently. The pupils were assured that neither would they be given any marks nor would the results of individuals be declared. The questionnaire had a simple Yes / No format. After the collection of the questionnaire, an interactive discussion with the students took place in detail to alleviate the misconceptions about laser hair removal. The data was recorded and analyzed by Microsoft Excel program.

Results: (Table 1)

A total of three hundred and forty five students from the first four year classes were enrolled in the study. First year students were ninety, second and third year students were eighty one each and fourth year students were ninety one in number. The male to female ratio was 1:1.75. The first part of the questionnaire was regarding the side effects of laser hair removal: laser treatment is harmful to skin (burns, scarring); laser treatment causes skin cancer; laser treatment causes eye damage; laser treatment is extremely painful. 72%, 68%, 64% and 10% of the students respectively gave a

Table 1: *Questionnaire on Laser Hair Removal.*

S. No.	Question	Positive Response				Average percentage
		1 st Year	2 nd Year	3 rd Year	4 th Year	
1.	Laser treatment is extremely painful	8	9	9	10	10%
2.	Laser treatment causes skin cancers	60	61	65	47	68%
3.	Laser treatment is harmful to skin (burns, scarring)	54	64	57	75	72%
4.	Laser treatment causes eye damage	54	50	62	55	64%
5.	Laser treatment involves the use of a fine needle	21	20	10	16	19%
6.	Laser hair removal is more effective than waxing of hair	71	62	75	85	84%
7.	White hair can also be treated by laser	47	50	35	32	48%
8.	Laser hair removal involves a single laser treatment session	14	13	10	3	11%
9.	Laser hair removal alone is sufficient in a female with irregular menstrual cycle	12	8	8	4	9%

positive response. The second part of the questionnaire dealt with laser hair removal: laser treatment involves the use of a fine needle, laser hair removal is more effective than waxing of hair; white hair can also be treated by laser; laser hair removal involves a single laser treatment session; laser hair removal alone is sufficient in a female with irregular menstrual cycle. 19%, 84%, 48%, 11% and 9% of the students respectively gave a positive response.

Discussion

This study clearly shows that misconceptions about laser hair removal are widespread among students of Foundation University Medical College, Islamabad.

The misconception that laser hair removal; involves the use of a fine needle, is extremely painful and harmful (causes skin burns, skin cancers and damages eyes) will of course be a reason for abstaining from taking up this particular form of treatment.

Laser is an acronym for Light Amplification by Stimulated Emission of Radiation. Though a light source is being used, 19% of our study population believed that a fine needle is used for laser treatment. The risk of transmissible infections from needle prick includes viral, bacterial and fungal infections. With laser hair removal this risk is avoided.

The term radiation emits alarm in people. Ionic radiation is carcinogenic; causes damage by stripping electrons from the atoms comprising any matter in the path of the radiation.³ A classic example of ionic radiations is X-rays.

In contrast, cutaneous lasers used for hair removal, generates kinetic energy (heat); excites vibrational and rotational motions.³ 68% of our study population believed that cutaneous lasers can cause skin cancers.

Eye protection is mandatory for both patients and laser personnel whenever laser hair removal is being performed. In fact, the eye is the most vulnerable of all the human organs to an accidental laser injury.⁴ Permanent visual loss can occur even with minor direct retinal exposure to laser light.⁵ Eye damage is avoided by the patient, laser physician and staff who use appropriate eye wear (provided by the manufacturer of the laser). This eye wear is specific for every laser. 64% of our study population believed that lasers cause damage to the eyes.

Long pulsed laser hair removal treatment can usually be tolerated without anesthesia,⁴ these produce minimal discomfort analogous to rubber band snapping on the skin. When concomitant epidermal cooling is used, in the form of ice, refrigerated gels, cryogenic sprays or contact cooling devices built into the laser hand piece,³ only a slight stinging sensation is experienced. However, when large areas are to be treated or the patient's threshold to pain is low, he/she can be offered topical anesthetics which include EMLA (eutectic mixture of lidocaine 2.5% and prilocaine 2.5% within oil in water emulsion),⁶ lidocaine⁷ and even piroxicam gel⁸ which provide adequate pain control. In the present study, 10% believed that laser treatment is extremely painful.

For Asian skin, long pulsed Nd: YAG 1064nm has been found to be safe, as compared to other laser systems.⁴ Alster TS *et al.* in their study⁹ of laser hair removal with long pulsed Nd: YAG 1064 nm laser in patients with pigmented skin, reported transient and mild side effects. These included pigmentary alterations in 5% and vesiculation in 1.5% of the patients.

In another study,¹⁰ no permanent side effects or scarring was observed with laser hair removal by long pulsed Nd: YAG 1064 nm in pigmented skin. However, 72% of our study population believed that laser treatment is harmful to skin (burns, scarring).

A preoperative laser consultation is important to assess the patient's specific risk of adverse sequelae. The consultation should include a history of excessive sun exposure, abnormal scarring, herpes simplex outbreaks, immune disorders, use of concomitant medication and previous cosmetic procedures performed on the involved area. Proper pre and post treatment care should be followed by the patients.

The role of the laser physician cannot be over emphasized. A holistic approach towards the patient is required. Firstly, unwanted hair has to be classified into hirsutism and hypertrichosis. Hirsutism is characterized by excessive growth of terminal hair in a male pattern, in women. It may result from various causes including polycystic ovary syndrome (PCOS), non-classic adrenal hyperplasia, adrenal or ovarian tumors, or it may be idiopathic.¹¹

Hypertrichosis refers to hair density or length beyond the accepted limits of normal for a particular age, race or sex. The excess hair may be generalized or localized.¹² It may result from acquired or hereditary disorders and drugs, or it may be familial or constitutional. Complete management of unwanted hair requires a detailed history, relevant investigations and treatment of the underlying cause¹² along with laser hair removal. A liaison with the radiologist, gynecologist and or an endocrinologist may be required. However, in our study 9% believed that laser hair removal alone is sufficient in a female with irregular menstrual cycle.

Secondly, the laser physician must be well informed about the skin types, the hair biology, laser physics and laser tissue interaction which in turn will decide the choice of laser being used, (for Asian skin long pulsed lasers have been found to be both safe and effective)¹³ and the laser parameters being selected (pulse duration, fluence, and spot size of laser beam),¹⁴ which ultimately will affect the results of laser hair removal. Multiple treatment sessions are required for complete epilation of hair. Bencini PL *et al* in their study,¹⁵ on hair removal with long pulsed Nd: YAG 1064nm laser observed that 20-40% of hair reduction occurred with every laser session and 4-6 sessions were required for complete epilation, though cases of PCOS require more laser sessions than ones with no abnormality.¹⁶ In this study, 11% of the study population believed that a single treatment session of laser hair removal is sufficient.

White hair is not receptive to laser light, and its growth is not modified by the laser treatment.¹⁵ This is due to the

fact that laser light targets the melanin in the hair and since white hairs are devoid of melanin, these are not amenable to laser treatment.³ 48% of our study population believed that white hair can also be treated by laser.

Laser therapy not only provides a means of safe and effective hair removal but also significantly decreases the psychosocial morbidity associated with excessive hair growth.¹⁷

Awareness about laser hair removal amongst undergraduate medical students has a two fold impact: firstly, as they may themselves wish to adopt this therapeutic option and secondly as they may disseminate their misconceptions in the community. Therefore, an awareness program on laser hair removal is needed to alleviate the myths and misconceptions amongst undergraduate medical students and also in the community. This may be achieved by; organizing lectures/ seminars at schools and colleges; presenting articles & programs using print and other media as a medium to facilitate learning.

Literature search (Medline and pub med) (using key words laser hair removal + beliefs/ myths/ perceptions/ misconceptions) did not reveal similar studies; therefore, the results of the present study cannot be compared.

Further similar studies should be carried out in different segments of population in Pakistan as the current study only covers a segment of the population.

Conclusion

Misconceptions about laser hair removal are widespread among students of Foundation University Medical College, Islamabad.

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