

# Audit of 75 patients of hirsutism treated with Intense Pulse Light (IPL) in Dermatology Department, Mayo Hospital Lahore

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## Abstract

**Objective:** Hirsutism is a common issue in dermatology affecting 5- 10% of females during their reproductive years and is characterised by excessive terminal hair in male pattern. It causes significant psychological and emotional stress in females. The objective of the study is to evaluate the percentage of patients achieving satisfactory outcomes and to determine incidence of side effects.

**Methods:** This clinical audit was done at dermatology unit II Mayo Hospital, Lahore over a period of 3 months, on 75 patients of hirsutism, all treated with intense pulse light (IPL). Data of 75 patients was retrospectively analyzed. Variables extracted including age, association with Poly Cystic Ovarian syndrome (PCOs), number of sessions done and power range.

**Results:** The study population had a mean age of  $28.48 \pm 8.09$  years with a wide range spanning from 16 to 64 years. After evaluation it was noticed that 58.67% (n=44) of patients experienced a satisfactory response to intense pulse light and the majority of patients reported no side effects (n=64).

**Conclusion:** This audit revealed that IPL appears to be a safe and effective treatment option for hirsutism with a significant proportion achieving satisfactory outcomes.

**Keyword:** Audit; Intense Pulse Light (IPL), Hirsutism.

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## Introduction

Hirsutism is excess terminal hair that commonly appears in a male pattern in women. Although hirsutism is commonly associated with hyper-androgenism, few women have normal androgen levels. Majority of the cases of hirsutism are idiopathic. The common cause found on investigations is polycystic ovarian syndrome. Many medications can also cause hirsutism. It is associated with significant psychological and social impact. History and physical

examination is very important in excluding the cause.<sup>1,2</sup> Different treatments have been proposed to manage it such as losing weight, shaving, waxing, hair removal creams and oral contraceptives pills. Light sources and lasers represent the mainstay in managing this condition.<sup>3</sup> Intense pulse light has been used for this purpose for more than two decades. Intense pulse light devices emit non coherent multi-chromatic, non-collimated light with a wavelength ranging between 400 and 1200 nm. It offers significant hair reduction and improves social stigma.<sup>4,5</sup>

IPL works by emitting broad-spectrum light that destroys and inhibits future hair growth. Unlike laser hair removal, which uses a single wavelength of light, IPL uses a range of wavelengths, making it a versatile treatment option for various skin types and hair colors.<sup>4,6</sup>

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Over the years, studies have shed light on the effectiveness, safety, and usage patterns of IPL for hirsutism management, offering insights into its growing acceptance as a treatment modality. This article aims to audit the outcome of 75 patients with hirsutism treated with intense pulsed light at Mayo Hospital, Lahore. The goal is to evaluate the effectiveness, safety, and patient satisfaction with IPL therapy in managing hirsutism, as well as to explore potential factors influencing treatment success. Through this audit, we seek to contribute to the growing body of evidence supporting IPL as a valuable option in the management of hirsutism

### Material and Methods

This clinical audit was conducted on 75 patients presented with hirsutism and treated with intense pulse light (IPL) therapy at Mayo Hospital, Lahore over a period of 3 months. The objectives were to evaluate the percentage of patients achieving satisfactory outcomes, determine incidence of side effects and analyze the distribution of age group and their response to treatment. We retrospectively analyzed data of 75 female patients diagnosed with hirsutism from our medical record. Variables extracted included patient demographics like age, association with PCOs, number of IPL sessions done & power range of IPL used. Percentage of patients with satisfactory outcomes and incidence of side effects were also noted. To ensure a robust evaluation of IPL therapy, we included only those patients who completed three & more treatment sessions, with a maximum of six sessions. Each treatment session utilized an IPL power range of 10-25 J/cm<sup>2</sup>, tailored to individual patient needs. Patient satisfaction was categorized as unsatisfactory, static and satisfied. No physician assessments were conducted. We focused solely on patient-reported outcomes.

Statistical analysis was performed using SPSS 25 software. The results were expressed as mean±standard deviation and percentage.

### Results

The study population had a mean age of 28.48±8.09 years with a wide age range spanning from 16 to 64 years. The majority of patients fell within the 25-44 age group (60%), followed by 16-24 years age group (36%) with a smaller proportion in 45-64 age group (4%) (**Table 1**).

Only 5.33% (n=4) patients were found to have polycystic ovarian disease. The number of treatment sessions ranged from 3-6 with 30.66% patients receiving 3 sessions, 24% received 4 sessions, 21.33% had 5 sessions and 24% had 6 sessions respectively. The primary outcome revealed that 58.67% (n=44) of patients experienced a satisfactory response to IPL treatment, 30.67% showing static results and only 10.67% reported an unsatisfactory outcome (**Figure 1**).

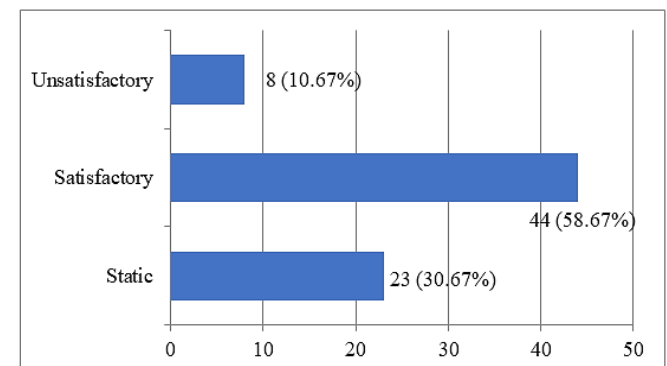
Side effects were minimal, with the majority reporting no side effects (n=64) while a small number experienced burning (n=5) and erythema (n=6).

### Discussion

In our study the participants ranged from 16-64 years with mean age 28.48±8.09 years. Other studies done

**Table 1** Age distribution of patients.

Group	Age range	n (%)	Mean±SD
Group I	16-24 yrs.	27 (36%)	27.80±7.30
Group II	25-44 yrs.	45 (60%)	28.08±7.07
Group III	45-64 yrs.	3 (4%)	40.67±15.80



**Figure 1** Outcome of patient's satisfaction.

previously showed mean age range  $32.7 \pm 9.9$  years<sup>7</sup> and  $30.24 \pm 8.569$  years.<sup>8</sup>

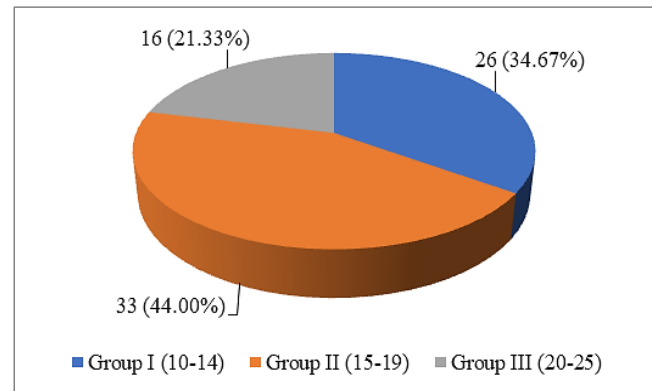
Our finding aligns with previous studies demonstrating the effectiveness of IPL in managing hirsutism. In our study 58.67% patients experienced a satisfactory response whereas in a study done by Aqsa *et al.*,<sup>7</sup> the reported success rate was excellent for 58.8% participants and 41.2% responded good to IPL treatment. Russal Anwer *et al.*,<sup>8</sup> also showed 70% satisfaction after five sessions. 30.67% of patients in our study showed a static response, suggesting minimal to no improvement. This highlights the variability in treatment response and the need for personalized approaches. Factors such as hair color, skin type, and underlying hormonal imbalances may influence the efficacy of IPL. Furthermore, 10.67% of patients reported an unsatisfactory outcome, indicating potential limitations of IPL in certain individuals. These findings are consistent with some other previous studies like in Subha R *et al.*<sup>5</sup>

We divided the 75 patients in 3 groups according to the power setting of IPL i.e. Group1 (10-14), Group2 (15-19), Group3 (20-25). We observed that the patient in Group 2 (n=33) had the maximum satisfactory response that is 24 patients reported satisfaction and in Group 1 (10-14), 9 patients showed satisfactory response while in Group 3 (20-25), 11 patients were satisfied. So the power setting of Group 2 (15-19) had the maximum (**Figure 2**).

Among 40 patients, 70% of patients were satisfied and 25% patients were very satisfied. In another study of Fodor *et al.* only 60% patients rated their satisfaction to be good.<sup>9</sup>

In our study only 4 patients had polycystic ovarian disease (PCOD) but Subha R *et al.*<sup>5</sup> reported that 22 patients out of 44 had polycystic ovarian disease and there was no difference in hair reduction between PCOD patients and non PCOD patients which is also supported by Taylor *et al.*<sup>10</sup>

The safety profile of IPL was generally favorable, with



**Figure 2** Power range of IPL.

the majority of patients (n=64) reporting no side effects. However, some patients experienced transient side effects such as burning (n=5) and erythema (n=6). These findings are consistent with previous reports of mild and temporary side effects associated with IPL treatment as only mild erythema and perifollicular edema was observed by Subha R *et al.*<sup>5</sup> These side effects, emphasized the importance of proper cooling techniques and appropriate energy settings.

### Limitations

This study has some limitations. As a retrospective clinical audit, it relies on existing medical records, which may have incomplete or inconsistent data e.g. skin type & affected area of face. Additionally, the lack of a control group limits the ability to compare IPL treatment with other modalities. Future prospective studies with larger sample size, complete data about skin type, specific area of face involved (chin, jawline) and control groups are needed to further validate these findings.

### Conclusion

IPL appears to be a safe and cost effective treatment option for hirsutism in patients, with a significant proportion achieving satisfactory outcomes. However, the variability in treatment response highlights the need for personalized approaches and careful power/ energy selection. Further research is warranted to optimize treatment protocols and identify factors that predict treatment success.

**Declaration of patient consent** The authors certify that they have obtained all appropriate patient consent.

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**Conflict of interest** Authors declared no conflict of interest.

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