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Platelet rich plasma micro-needling versus topical 5% minoxidil in the treatment of patterned hair loss

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Statement of the Problem: Patterned hair loss (PHL) is a distressing common problem. It is associated with progressive reduction in hair density and hair fiber thickness affecting mainly the fronto-vertical regions of the scalp. Available lines of treatment are not uniformly effective. Platelet rich plasma and micro-needling have been introduced recently to the armamentarium of treatment. Their comparative efficacy to topical minoxidil has not been evaluated.

Methodology & Theoretical Orientation: Forty patients with clinically diagnosed PHL were recruited after exclusion of other causes of hair loss. They were divided into two equal age, sex, and severity matched groups. The first group received daily 2 ml topical minoxidil 5% while the other received monthly sessions of combined Platelet Rich Plasma mesotherapy and scalp micro-needling. The effect of treatment was evaluated by a blinded investigator who graded the patient's alopecia and performed a non-vellus hair count in a target area after 12 and 28 weeks of treatment. Patient satisfaction with treatment, change in hair shedding rate as well as side effects was recorded.

Findings: Both treatment modalities were comparably effective in improving hair density and alopecia grade. Patients' satisfaction was comparable with both modalities. Both lines were well tolerated, however the onset of action of minoxidil was significantly quicker.

Conclusion & Significance: Topical minoxidil remains the first line of treatment for patients with PHL given its efficacy, tolerability and relative low cost. PRP with micro-needling could be considered effective 2nd line therapies for intolerant or unfit patients for minoxidil.

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Table 1: Effect of treatment on hair count

parameters	Minoxidil (N=20)	PRP (N=20)	Test of significance
1 st hair count (baseline) Mean±SD	82.5±31.18	77.2±38.2	Mann-Whitney U test Z=-0.809 p=0.54
2 nd hair count (after 12 weeks)	83.45±33.38	76.1±37.13	-----
3 rd hair count (after 28 weeks)	86.55±35.65	85.59±39.16	Z=-0.118 p=0.27
Difference in hair count: Between 1 st and 2 nd count	Z=0.83 p=0.000*	Z=-1.14 p=0.254	Wilcoxon signed rank test
Between 2 nd and 3 rd count	Z=-3.383 p=0.001*	Z=-2.337 p=0.036*	
Between 1 st and 3 rd count	Z=-0.862 p=0.000*	Z=-2.465 p=0.016*	
Change in hair count from baseline after treatment Mean±SD	5.05±11.85	5.05±17.95	Mann-Whitney U Z=-0.118 p=0.238

*P<0.05 is considered statistically significant