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Hair Growth promoting activity of Pig oil on Wister rats

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ABSTRACT

Common baldness, sometimes called male or female pattern baldness, accounts for 99 percent of hair loss in men and women. Although its exact causes are unknown, heredity, hormones and age are contributing factors. The objective of the present work was to evaluate the influence of pig oil (Lard) on hair growth pattern in Wister rats. The hairs of one area of dorsal surface of rats removed by the application of hair removal cream and the pig oil (0.5 ml) were applied. Minoxidil (10%) was used as standard. The hair depilated regions were observed for the hair growth initiation afterward the length of hair was measured at 15th, 21st, 30th and 40th day. The result of present study indicates that the pig oil significantly potentiate to increase in hair growth pattern in rats. The significant effect of pig oil start to observed from 15th day. The results were comparatively more significant than standard Minoxidil. While the exact mechanism and chemical constituent responsible for the hair growth promoting are need to explore.

Keywords: Pig oil, Minoxidil and Hair growth promoting.

INTRODUCTION

Common baldness, sometimes called male- or female-pattern baldness, accounts for 99 percent of hair loss in men and women. Although its exact causes are unknown, heredity, hormones and age are contributing factors [1]. Unlike hair loss resulting from disease or other non-hereditary factors, hair loss due to common baldness is permanent [2]. Male baldness usually begins with thinning at the hairline, followed by the appearance of a thinned or bald spot on the crown of the head. Women with common baldness rarely develop bald patches. Instead, they experience a diffuse thinning of their hair. Factors such as diet, medications, natural hormones, pregnancy, improper hair care and certain diseases can cause temporary hair loss [1,3-5].

The main problems associated with hair such as pigmentation problems (Fading), dandruff and falling of hair [6]. There are only two drug treatments approved by the U.S. Food and Drug

Administration (FDA) for male pattern baldness Minoxidil and Finasteride. Synthetic drug, minoxidil is a potent vasodilator appears safe for long term treatment. After 5 years use of 2 and 3 % topical minoxidil, the improvement has been shown to peak in one year with a slow decline in regrowth over subsequent years [7]. Long term treatment with local side effects may be a problem with continuing use of minoxidil lotion [8, 9].

There are also number of medicinal plant are reported to use for hair growth in badness such as caffeine, Lygodii spora, *Polygara senega, Tridax procumbens etc* [10-13]. There is no any scientific report available on pig oil for its applications for hair growth except lard production and in bakery [14]. It is also used in the development of experimental model for the obesity in High Fatty Diet model [15]. In hair parlor pig oil is used on the crown of head for quick appearance of hair. Thus the objective of the present study was to evaluate the effect of pig oil on hair growth pattern in Wister rats

MATERIALS AND METHODS

Collection and Administration of Pig oil: Pig oil was obtained from the local market and apply topically in the same form in dose of 0.5 ml.

Animals

Wistar albino rats weighing about 150-250 g of either sex acclimatized to the experimental room at temperature 28±2 °C, controlled humidity conditions (50-55%). They caged with a maximum of two animals in polypropylene cage and fed with standard food pellets (Amrut Food Sangali, Maharastra India) and water *ad libitum.* The study conducted after obtaining ethical committee clearance from the institutional animal ethical committee of SNIOP.

Experimental

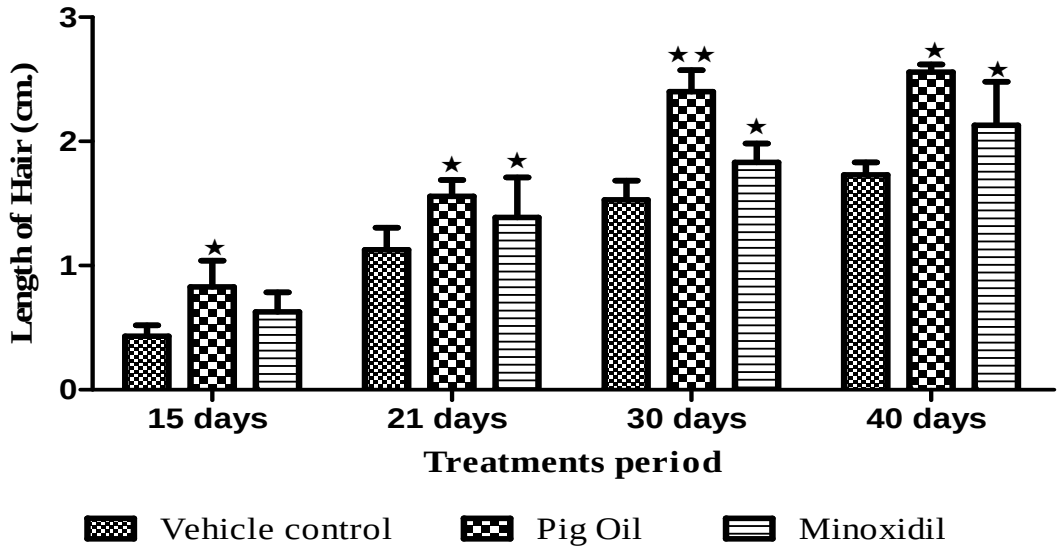
The method described by Saraf, *et al* [10] used. Screening of hair growth potential was evaluated in Wistar albino rats weighing 150 –250 gm. The hairs of the dorsal portion of the rats (2-3cm) clipped with scissor and the hair removed after the application of hair removal cream (Anne French). For the topical application, only the hair of one area on the dorsal surface was removed. After removal of hair, animals divided into three groups, each group containing 5 animals. Group I was normal without any application. Group II apply 0.5 ml of Pig oil and group III apply topical application of 0.5 ml standard Minoxidil (10%). The hair depleted regions were observed for hair growth initiation afterward the length of hair was measured at 15^{th}, 21^{st}, 30^{th} and 40^{th} day and compare it with length of hair at side region for withdrawal of therapy.

RESULTS AND DISCUSSION

Baldness is a common problem found in both male and female. The factors responsible for the hair loss are various. There are very limited drug treatments are available for the baldness among these Minoxidil is a popular drug and is found to be safe also. While after few year use there is decline in the regrowth of hair [8]. There are also reported some side effects with the minoxidil. In hair parlor pig oil is used on the crown of head for quick appearance of hair. Thus the objective of the present study was to evaluate the effect of pig oil on hair growth pattern in Wister rats.

Fig 1: Effect of Pig oil on Hair regrowth in rats

Fig.2: Effect of Pig oil on hair growth pattern on wister rats



Values are given in mean ± SD for groups of five rats in each. Values are statistically significant at p<0.05 and p<0.01 (ANOVA followed by Tukey test; Graph Pad prism Version 5.0). ★ Significant (p<0.05) difference compared with vehicle with respective treatment period. ★★ Significant (p<0.01) difference compared with vehicle with respective treatment period. (Treatments of pig oil was terminated after 30 days while minoxidil after 35 days)

The result of study shows that the complete hair growth was observed after 40 days in normal animals. The application of test sample (Pig oil) and standard Minoxidil do not produce any considerable effect on initiation of hair growth (approximately 7 days) compare to normal animals while the chronic application of drugs for more than 15 days indicates to decrease in the time interval for complete hair regrowth (Fig 1 and 2). The results of topical application of pig oil found to normalize the hair pattern after 30 days approximately (the application of pig oil stop thereafter) while for minoxidil it take more than 35 days for normal make up. Thus from the results it concludes that pig oil more potentiate to increased the hair regrowth pattern compared to minoxidil. While the exact mechanism in potentiation of hair regrowth by pig oil is unknown thus there is need to explore pig oil for its potentiation for its hair growth activity.

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