

Assessment of Correlation of Lip Prints with Abo Blood Group

Achint Garg*, Upasana Sethi Ahuja**, Annu Saini***, Kesari Singh***

Abstract

Aim and Objective: To assess the correlation between lip prints and ABO blood group in students of I.T.S Dental College, Greater Noida. *Material and Method:* 110 subjects (55 males and 55 females), aged between 17-25 years were included in the study. *Result:* The results of the present study shows the significant correlation between lip print and blood group. The predominant blood group found in the present study group was O+ and the partial type was predominant lip print. *Conclusion:* Lip prints have certain limitations like the same person can produce different lip prints, according to the pressure, direction and method used in taking the print and Smudging of lip prints, but its features like stability and uniqueness enable it to use as evidence in court of law. The gender and geographical origin can be determined with the lip prints.

Keywords: Lip Prints; Blood Group; Comparative Analysis; Greater Noida; Legal Proceedings.

Introduction

Dentistry's fundamental and clinical disciplines have, from time to time, shed light on questions of civil and criminal law. Civil cases range from single malpractice suits to mass disaster insurance claims. Criminal cases involve identification both of murder victims and of suspects[7]. Latent or chance impressions located on smooth surfaces are encountered in a majority of the investigations which require comparative analysis. These impressions may arise from a number of sources, the most frequently encountered being impressions of areas of skin bearing friction ridges, predominantly those from the fingers. The possibility of impressions arising from an area of the skin devoid of friction ridges has been noted. Cases in which impressions devoid of friction ridges have been used for evidential purposes, have primarily involved lip impressions[7].

Lip prints are the fissures and wrinkles present in the zone of transition between inner labial mucosa

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and outer skin. Lip prints appear at the age of 6 weeks of intrauterine life[17]. Study of these lip prints is known as Cheiloscopy. Use of lip prints in forensic sciences for personal identification is of paramount importance in judicial settings and court proceedings. The aim of the present study was to assess the correlation of lip print pattern with gender and ABO blood group in students of I.T.S Dental College, Greater Noida.

Aim and Objectives

To investigate the uniqueness of the lip prints to any blood group in the population under investigation.

To ascertain whether lip prints behold the potential for determination of sex of the person.

Materials and Methods

The present study included 110 subjects (55 males and 55 females), who were aged between 17-25 years.

Inclusion Criteria

1. Subjects who were willing to participate in the study
2. Subjects who were ready to provide informed consent

Exclusion Criteria

1. The subjects undergoing orthodontic treatment.
2. The subjects with any congenital and pathological lip condition.
3. Subjects having hypersensitivity to lipsticks

Study Materials.

1. Commercially available red lipstick and lipstick applicator,
2. Transparent cellophane tape that was glued on one side,
3. A4 size white bond paper,
4. Magnifying lens,
5. Anti-A sera, anti-B sera, anti-Rh sera, and slides for ABO Blood group testing.

Technique

Made the subject to sit comfortably in the dental chair. Clean the lips of the subject thoroughly and apply lipstick on the lips with lipstick applicator uniformly. Allow the lipstick to dry for 30 seconds and impression of the lips were taken with the transparent cellophane tape from the glued side. Remove the cellophane tape carefully from the lips and stuck it on A4 size white bond paper. The impression obtained was divided into six sections and analyzed by using magnifying glass. Suzuki and Tsuchihashi classification were used to classify lip

prints.

1. Type I – A clear cut groove running vertically across the lip
2. Type I' – Partial length groove of Type I
3. Type II – A branched groove
4. Type III – An intersected groove
5. Type IV – A reticular pattern
6. Type V – Undetermined.

The results were statistically analyzed by using chi-square test, Mann-Whitney test and Kruskal Wallis's test.

Results

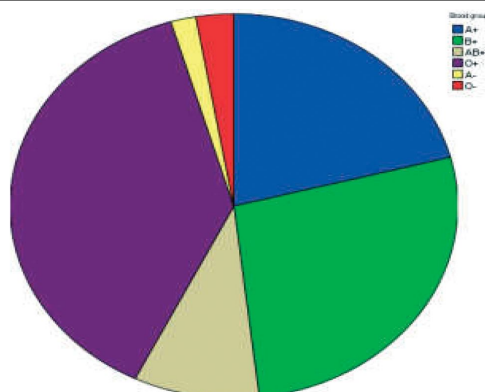
In the present we used Suzuki and Tsuchihashi classification to classify lip prints. Blood group O+ found to be predominant in the studied population (Graph 1) followed by blood group B+ in males and blood group A+ in female (Graph 2). In the studied population partial type of lip prints were significantly higher in females followed by branched and intersected pattern. Branched type of lip prints were significantly higher in males followed by complete and intersected type of lip print pattern (Graph 3). Type I', II and III were predominant in blood group O+ and type II was predominant in blood group B+ (Graph 4).

Table 1: Correlation of lip print with gender

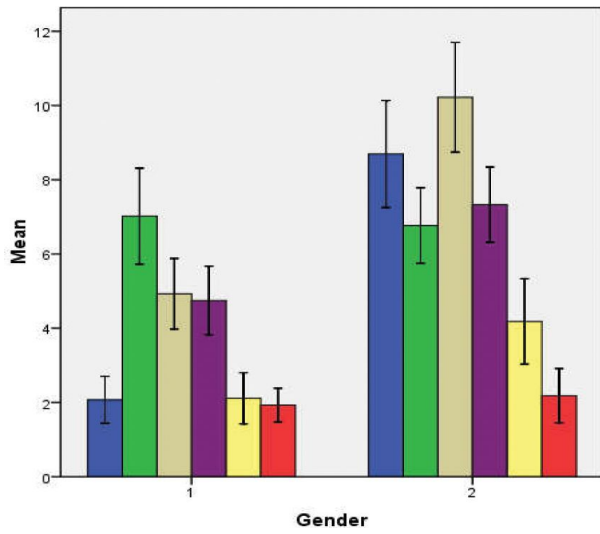
	Complete	Partial	Branched	Intersected	Reticular	Undetermined
Mann-Whitney U	291.000	1.508E3	599.000	937.000	1.071	1425.000
Wilcoxon W	1831.000	3.048E3	2139.000	2477.000	2.611	2965.000
Z	-7.348	-.030	-5.479	-3.458	-2.717	-.537
P value	.000	.976	.000	.001	.007	.591

Table 2: Correlation of lip print with ABO blood group

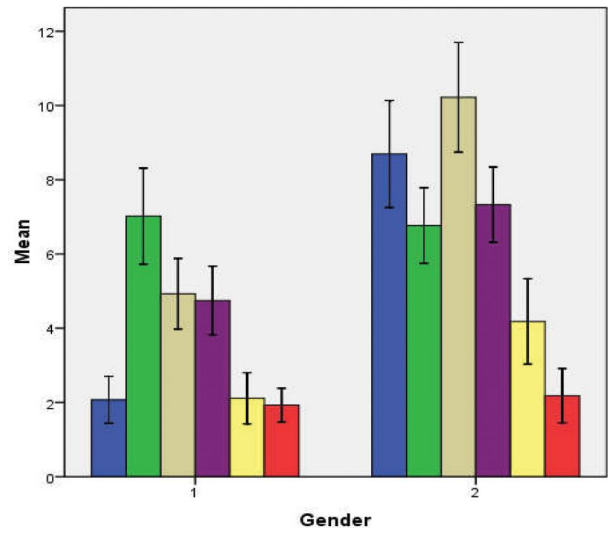
	Complete	Partial	Branched	Intersected	Reticular	Undetermined
Chi-Square	9.561	11.290	9.833	4.418	4.591	10.492
Df	5	5	5	5	5	5
P value	.089	.046	.080	.491	.468	.062



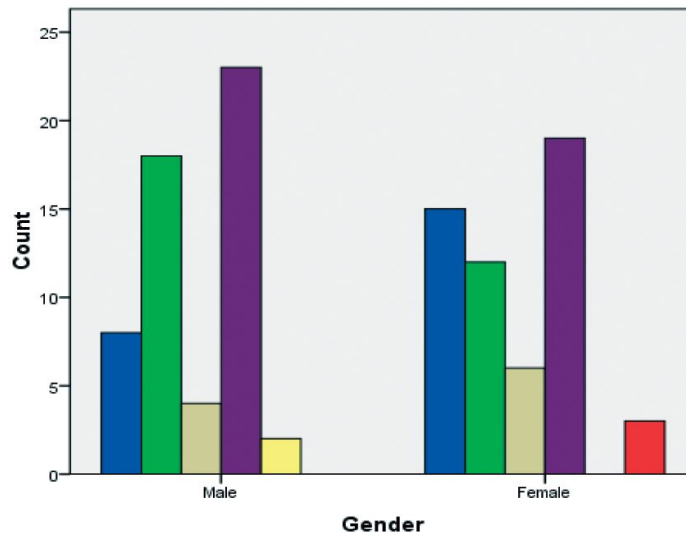
Graph 1: Distribution of blood group in the population



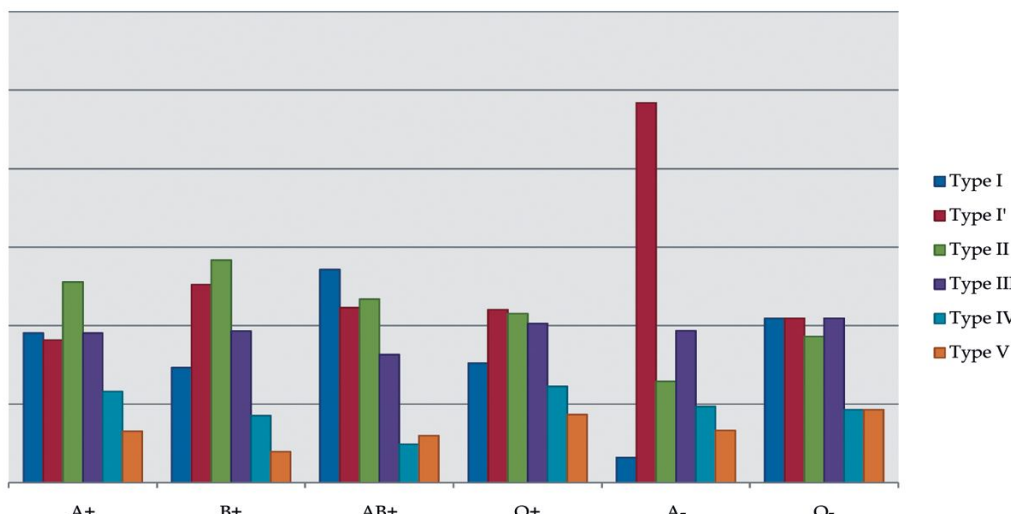
Graph 2: Distribution of lip prints in the population



Graph 3: Distribution of lip print pattern in males and females



Graph 3: Distribution of lip print pattern in males and females



Graph 4: Distribution of blood group and lip print pattern combinations in the study group

Discussion

Cheiloscopy is a relatively new field among the large number of identification tools available to the forensic expert. In the present study 110 subjects (55 male and 55 females) were included who were free from any congenital or pathological lip abnormality. Informed consent was taken from the subjects. Lip prints of the subjects were taken from the glued part of the transparent cellophane tape and stuck on the white bond paper, which was analyzed with the magnifying glass. Suzuki and Tsuchihashi classification was used to classify lip prints. According to the results the O+ blood group found to be the predominant in the present study followed by A+ in females and B+ in males. In similar studies by Patel et al on Visanagar, Gujarat and Srilekha et al blood group O+ was found to be predominant [3,4].

In the present study the type II (bisected) lip print pattern was predominant in the studied population. Partial (I') type of lip prints were significantly higher in females followed by branched (II) and intersected (III) pattern. Branched type of lip prints were significantly higher in males followed by complete and intersected type of lip print pattern (Graph 3). In another study by Patel et al type II pattern found to be predominant in both the sexes[3]. Type II lip print pattern found to be predominant in subjects with blood group A+ and B+ followed by type I' and III. Type I' pattern was predominant in subjects with blood group AB+ followed by type II and III. In blood group O+ type I', II and III were significantly higher.

In study by Patel R type II was predominant in subjects having blood group A+.³ In blood group B+ and O+ type I' and II were predominant respectively. In another study by Srilekha et al type IV lip print pattern was predominant in subjects with B+ blood group and type I lip print pattern in subjects having blood group O+[4].

In previous study by Karim et al Blood group A+ is predominant among individuals with type III lip prints, individuals with the B+ and O+ blood groups mostly exhibit type III lip prints. In blood group A- the most predominant lip prints was type II lip print, individuals of the blood group B- show predominant type I lip print[17].

In a study by Harsh L individuals with A+ and AB+ blood group had more of branching lip print pattern, while those of A- blood group and AB- blood group predominantly had an intersecting pattern[15].

Conclusion

Lip prints have certain limitations like the same

person can produce different lip prints, according to the pressure, direction and method used in taking the print and Smudging of lip prints, but its features like stability and uniqueness enable it to use as evidence in court of law. The gender and geographical origin can be determined with the lip prints.

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