



A Study of cogitation on Salivate agglutinins on Jaats of Northern Population of India

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Abstract:

In forensic and Medical communities, empirical evidences (in any form) collected from scene of occurrence continues to validate the premises of persistence and identical. Salivary fluid is an exocrine stain encountered as evidences from scene of crime, whose analysis may link the accused and eliminate the innocents. In the present study, 130 samples of Jaats from District Meerut and Muzafarnagar; the population of Uttar Pradesh, Northern part of India have been analyzed for the presence of Anti-A and Anti -B have been studied as a resultant 32% agglutinins have been found in all the saliva samples. Agglutinins vary from one individual to another and the population of one region to another.

Keywords: Evidence; Population; agglutinins; saliva; samples;

Introduction:

In forensic Field, Evidences have a correlation between the victim and the culprit. The evidences may be encountered in any form from the scene of occurrence or in cases such as sexual harassment cases, questioned documents or in burglary cases. In medico-legal investigations, to determine the evidences and their analysis have great importance which may link the criminals with crime (Bikker F.J.,

2004). Human Saliva is an easily obtained, abundant secretion and a various studies have been carried out for proteins, agglutinins and grouping (Zhumaniezov E.K., & et al., 2001). Salivary agglutinins are higher molecular mass component of human saliva, which are deposited at crime scene on most varied objects having streptococcus mutans (an oral bacterium implicated in dental caries) (Prakobphol A. & et al., 2000) with major component of spectrum including 99% of water and 0.7% degenerate cellular elements and 0.3% other inorganic components that comes from glands, from lining of mouth (Eugen Dan, 2012).

Since, it is known to us that saliva is important evidence in the identification of blood group of an individual. A new method for dried blood stains were developed which includes complementary strategies to increase sensitivity and their potential use of detection the hemo-agglutinins (Harrington J.J., & et al., 1988). Yosida who studied different saliva samples to determine ABO blood group of each personal from anti-A and anti-B. ABO blood group iso-antibodies are antigens which are found in serum body fluids and other secretions. Naturally occurring alloanti-bodies

of an individual; ABH antigens are found in plasma which lacking the corresponding antigen on red cells. Some studies on salivary agglutinins have been made by a number of workers on specific region population to studied the frequency of persons having agglutinins and confirmed the presence of salivate agglutinations in saliva which have a specific reaction for A & B red blood cells (Harriangton J.J., & et al., 1988).

The relationship of these antibodies in serum is reciprocal to the corresponding antigen on red cells which helps in confirming ABO blood group of a personal and allows using homologous blood in transfusion. In the present study, 130 saliva samples were analyzed for the frequency of salivate agglutinins in the Jaat's of northern Indian population.

Material and Method:

In this study, 130 samples were collected from the Jaats; population of Uttar Pradesh, Delhi, northern part of India in April 2013. The personal were asked to rinse their mouth from water (Chattopadhyay P.K. & et al. 1983) so that the eatable can be removed from the lining of mouth and gap between the teeth. For Processing, a cotton swab was placed under the tongue of all the personal about 5 min., Then the personal were asked to squeeze it into the dry sterile small closed vial, then all samples were sealed with the laboratory tape so that the contamination from atmospheric couldn't damage the samples. All the samples were kept in refrigerator at (-5⁰ c) until the laboratory exploration.

Laboratory exploration:

All the samples were kept in refrigerator up-to the completion of sampling (approximately 1 month). For exploration, all the samples after opened seal in laboratory were kept at room temperature (26⁰c-32⁰c) for thawing. Saliva samples were centrifuged at 2500 rpm twice/10 min each and the supernatants were used to test the presence of agglutinins. With the help of a dropper, a drop of saliva sample was placed in each cavity tiles X & Y respectively and followed by a by a drop of 0.2% cell suspensions of twice washed cells of known A and B blood groups in respectively marked tiles X & Y. Separately; a drop of Blood group A was added in the sample of cavity tile X, and blood group B were added in Y cavity tile; after mixing the contents thoroughly and shaking the tile gently, the tiles were kept in a moist chamber for 25 minutes at 5⁰ c away from standards (increased temperature and decrease time). After taking out the tiles and shaken gently, the agglutination were examined from microscope and it was noticed that the clumps were present in the reaction (Shown in Fig.1 & 2).

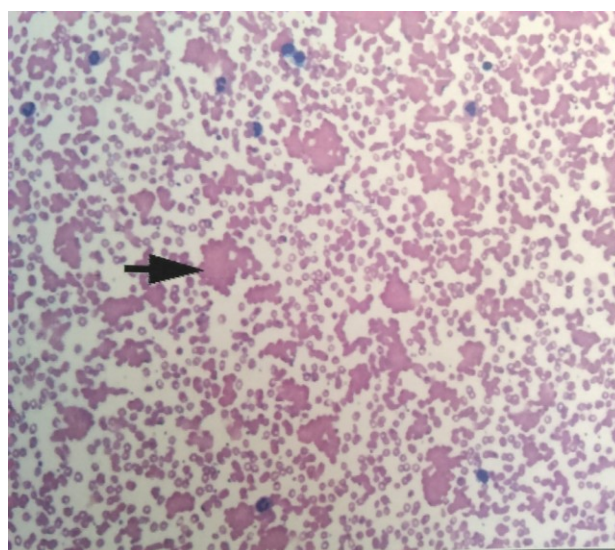


Fig 1; Showing agglutination

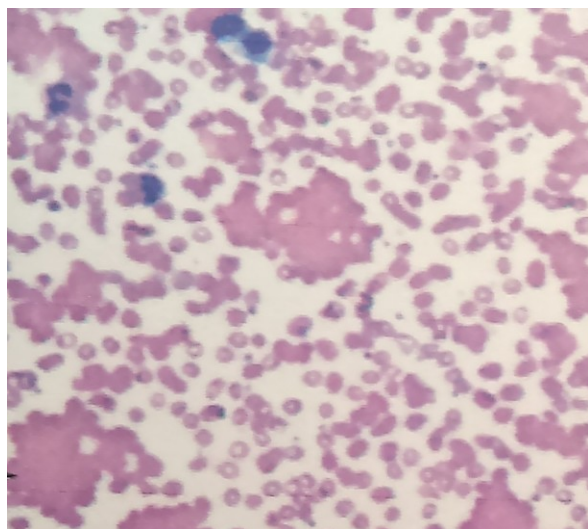


Figure 2; Close view of Clumps

Result and Discussion:

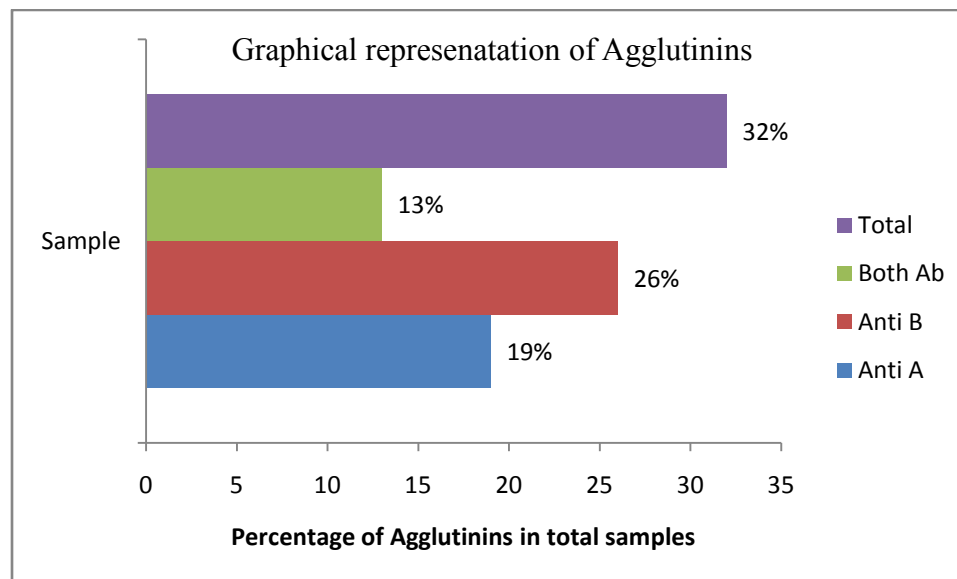
A very little is grasp about the molecular organization, the seretory granules and glands;

about the internal substructure about the mechanisms involved in secretory proteins. ABO blood group iso-antibodies not only naturally occurred but also confined the presence of serum in various secretions including saliva, cervical-secretion. Several studies on salivary agglutinin are related and it was identified as a protein fraction. The present study was conducted on a very limited size of sample from an entity and conjectures are made only hypothetical in nature. During the exploration, it was noticed that the salivate agglutinins with Anti-A was 14.61% and with Anti-B; it was 20%, while the mixed agglutinins with Anti-A & B was 10 % of the collected samples and sum up with the total 24.61% of the samples. Shown in table-1

Total Sample	Anti-A	Anti-B	Anti- A & B	Total
130	19	26	13	32
Percentage	14.61%	20%	10%	24.61%

Table 1; showing the ration of reaction anti-A & anti-B

The relative exhibit display that antigen-B was stronger and more detectable in the saliva of northern Indian population. The findings indicate the value (presence or absence) for whole saliva agglutinins, nature of serum antibody. Personal of blood group A appears to have lower agglutinins while the Group B was found to have the highest value which distinct it significantly. Shown in graph 1-



Graph 1: Graphical representation of Agglutinins

The presence / Absence of salivate agglutinins in analyzed samples of the northern population (Uttar Pradesh, Delhi) was computed in which agglutinins have been found in 32% of the studied saliva samples of Anti-A and Anti-B. Anti-B has been found to occur more frequently (26%) than Anti-A (19%) among the Jaat population of northern India. In comparative study, it was found that in Punjabis population 35.98% (Chattopadhyay P.K., & et al., 1983) occurred more frequently and in Gonds population of Madhya Pradesh is was about 17% (Chatterjee P., & et al., 2012), in Maharashtrian population; the agglutinins was 65.41% (Badiye A., & et al., 2014).

Conclusion:

To identify blood types of human being is diagnostically based on the reaction of red blood cell, antigen and agglutinins and having only two types of erythrocytes (Joshi S.R., & et al., 2009) that express only antigen-A, antigen-B,

antigen A & B together or absence at all. In the present study, we concluded that from the fresh sample of saliva of Jaats of northern Indian can be detected from anti-A and anti-B and it is possible to identify; that salivate anti-A and anti-B agglutinins have potential value in ABO blood group analysis of an individual. The percentage of Salivate agglutinins in northern Indian population was computed in which 32% was present while 68% was absence in preserved samples which is quiet higher in comparison of other conducted studies; Gonds of Madhya Pradesh, Punjabis and Maharastrain population. The data may vary according to the increment in population or region to region. The serologist have far been able to exploit this implication in blood grouping which can be used in cases such as genetics inheritances, DNA analysis, DNA finger-printing. It can be utilize in forensic case work examination when saliva or stains are recovered from scene of occurrence which will help in investigation and nabbing the suspects.



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