

Co-Relation Between Various Types of Blood Groups and Early Childhood Caries in Children Between Age 2 To 5 Years: A Comparative Study

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ABSTRACT

Aim: The main aim of the present study is to find any existing relationship between various types of blood groups and early childhood caries

Material and Method: A total of 139 patient was included in the present study. Blood sample and diagnosis of caries of every patient was recorded.

Result: In both boys and girls, Blood group O have increased chances of having Early childhood caries followed by Blood group A, Blood group B and Blood group AB.

Conclusion: There may exit a strong correlation between the Blood groups and Early childhood caries.

Keywords: Early Childhood Caries, Blood Group, Deciduous dentition.

INTRODUCTION

Early childhood caries is defined as “the presence of one or more decayed (non-cavitated or cavitated lesions), missing teeth (due to caries), or filled tooth surfaces in any primary tooth in a child 72 of months age or younger”. Various other names for early childhood caries are rampant caries, nursing bottle caries, milk bottle syndrome, nursing caries, baby bottle tooth decay, baby bottle caries.

Early childhood caries is considered as multifactorial diseases which occurs because of interactions of various factors such as cariogenic microorganisms, exposure to carbohydrates and some social variables^{1,2}. Early childhood caries is considered as one of the most prevailing dental diseases in children worldwide³. ECC or early

childhood caries affects both oral health as well as general health of the children⁴. Few complications seen in children having early childhood caries are oral pain, enamel defects, orthodontic defects, problem in eating and speaking. Also there is increased chances of development of caries in permanent dentition when children have early childhood caries^{5,6}.

Early procurement of Streptococci mutans is considered as a leading risk factor in development of early childhood caries. When Streptococci mutans is transmitted from mother to child it is called as vertical transmission. It has been observed that neonatal factors are competent in early

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procurement of Streptococci mutans through vertical transmission^{7,8,9}.

The ABO blood group system was first described by scientist Karl Landsteiner in the year 1900. Blood group is chiefly based on RBC's antigenic property. For ABO group, the gene is situated on chromosome 9 and for Rh system, the gene is present on chromosome 1¹⁰.

The study and research of blood grouping is of prime importance because blood plays crucial role in genetics and blood transfusion as well as forensic pathology¹¹. So, keeping this fact in mind, the present study is designed to find whether there is any co-relation exist between early childhood caries and blood group.

MATERIALS AND METHOD

In the present study, total sample size is 139 .Out of which 78 are boys and 61 are girls.

Age group of all the patients are in between 2-5 years.

Inclusion criteria

1. All deciduous teeth present in the oral cavity
2. Teeth which are completely erupted.

Exclusion criteria

1. Any anomalies or craniofacial syndrome
2. Patient underwent orthodontic treatment
3. Permanent tooth

All the procedure for taking blood sample for blood examination and diagnosis of caries was thoroughly described and explained to the parents of the children. The informed consent from parents is taken. For taking the blood sample, we have requested the parents to sit with their children so that children will be calmed and feel comfortable. After that blood sample has been taken. Immediately after blood withdrawn, the blood group is checked with the help of antisera (Figure number 1). The final blood group is record in the note book.

For diagnosis of the caries, two operators were assigned for this purpose so as to avoid biased



Fig 1: Antisera for determining blood group.



Fig 2: Presence of Caries Seen Clinically.

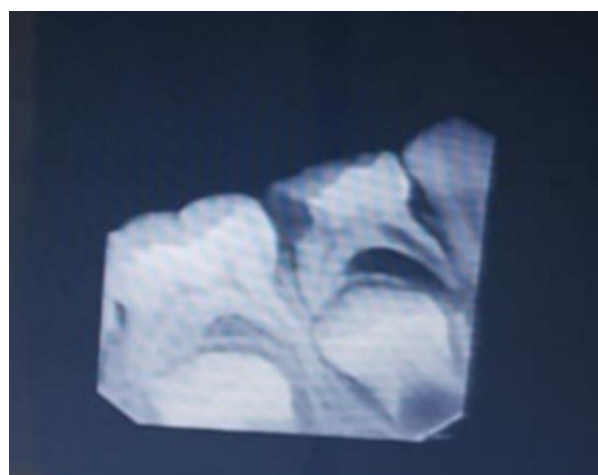


Fig 3: IOPA (intra oral periapical radiograph) showing presence of caries.

results. The instruments used for checking caries are mouth mirror and probe. Caries are checked clinically by opening the oral cavity and with the help of mouth mirror and probe (Figure number 2). Whenever there is conflicts regarding the presence and absence of caries, the x-ray of the tooth is taken

Table 1: Distribution of Blood group and Early childhood caries in boys

Gender	Blood group	Early childhood caries
Boys	A	21
	B	15
	AB	05
	O	37

Table 2: Distribution of Blood group and early childhood caries in girls

Gender	Blood group	Early childhood caries
Girls	A	19
	B	09
	AB	06
	O	27

to clear the conflicts (Figure number 3). The data is recorded in the note book.

At the end, counseling of the parents as well as children has been done. The parents are guided regarding the dietary habits and brushing techniques. Also the parents are requested to do regular check up of the teeth of their children's. After collecting the data of blood samples and caries, the data is sent for analysis.

RESULTS

In the present study ,total 139 patients are participated, out of which 78 (56%) are boys and 61 (44%) are girls. After collection of data of blood group and caries, the data was analyzed.

In boys ,it was observed that presence of early childhood caries was more common in blood group O (48%),which is followed by blood group A (27%) ,B (19%) and AB (6%) (Table number 1). In girls ,it was observed that presence of early childhood caries was more common in blood group O (45%),which is followed by blood group A (32%) ,B (14%) and AB (9%) (Table number 2). It was observed that blood group O is most common blood group showing presence of early childhood caries in both boys and girls.

DISCUSSION

Early childhood caries is considered as leading oral health problem, which is mainly seen in socially poor and disadvantage people. Early childhood

caries is affiliated with some health problems like infections, local pain, malnutrition, difficulty in sleeping, gastrointestinal disorders and abscesses.

It is known that early childhood caries is multifactorial in origin and is associated with interaction between microorganism and sugars on tooth surface. Various factors like lack of fluoride exposure, high sugar intake, enamel defects, lack of oral hygiene are answerable for development and advancement of early childhood caries. In the present study, a total of 139 school going children participated. Out of these, 78 are boys and 61 are girls. All the children's are in age group of 2-5 years.

We observed that in boys, the most common blood group which shows increase chances of early childhood caries is blood group O (48%),which is followed by blood group A (27%),blood group B (19%) and blood group AB (6%).

In girls, the most common blood group which shows increase chances of early childhood caries is blood group O (45%),which is followed by blood group A (32%),blood group B (14%) and blood group AB (9%). According to the study done by Pardasani Et al ,they observed that children having blood group O are having high chances of development of early childhood caries.

CONCLUSION

In the present study it has been observed that children's having blood group O is on higher risk for development of early childhood caries. Study with

more number of children's should be recommended so as to get more accurate data.

CONFLICTS OF INTEREST

The authors declare they have no potential conflict of interests regarding this article.

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