Original Article

Relation Between Steroid and formation of CLP

Maternal Exposure to Steroid, Unknowing by Taking Medicine from Religious Ammil for Birth of Boy and the Risk of Oral Cleft in Newborn

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ABSTRACT

Objective: The aim of present study was to find out a relation between environmental factors (steroid) and formation of Cleft Lip and Palate (CLP) by comparing the cases of CLP with controls.
Study Design: Convenient Sampling, Case control.
Place and Duration of Study: The study was conducted at the Mayo Hospital Lahore, Children Hospital Lahore and Arif Hospital, Rrashid Latif Medical College from 1st January 2014 to 31st December 2014.
Materials and Methods: It was a convenient sampling, case control study, one hundred cases of Cleft Lip and Palate newborns up to age of six months, in different Hospitals of Lahore, having facilities of treating CLP. Antenatal history was taken in first three months of pregnancy from mothers about, taking medicine from religious Ammil for birth of male baby.
Results: The frequency of CLP was found to be significantly higher in mothers who were taken medicine from religious Ammil for birth of boy (12% as compared to 7.4% of controls).
Conclusion: Medicine taken from Religious Ammil during the first trimester of pregnancy resulted in increased frequency of CLP in newborns.
Key Words: Cleft lip, Cleft palate, Environmental factors (Medicine taken from religious Ammil)

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INTRODUCTION

Earlier people do not know about human development. They believe on religion and false notions.[1] First time Fabricius ab Aquapendente (1537-1619) revealed that CLP was due to intrauterine defective development of fetus. [2] A physician in China acquired skill to correct the CL in 390 BC. First patient who operated for CLP was a chine's person, Wey Young Chi 18 years old. [3,4]
A baby born with CLP has many problems. 1st is the feeding difficulty, baby with CLP feed slowly or bring up milk through nose, then speech and language problems. Hearing problem due to wet ear is also common. Later on jaw and teeth problems develop, with some missing teeth or added teeth, psychological problem is very vital and is a problem for baby to adjust in society.

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New borne with CLP needs, a prolonged series of treatment and surgery from birth to child adolescence.[5] Children with CLP feel nervousness and sadness. They feel that they are not treated properly by their age groups, so many behavioral changes can occur in them. [6]
Imperfective listening, speech, face look can cause long standing bad effects on the health of patients. These children need personal care from their parents for extended time. Feeding problem is very familiar in these patients. There is deficiency of proper suction of milk. To solve this problem special types of bottles with nipple are used. External ear may be disfigured in patients with CP and are liable to infection leading to hearing loss and speech defect.[7]
When children grow with cleft, they feel constant strain from society. At this stage, strong parent reinforcement is needed to prevent the negative reaction in their children. [8]
If clefts are repaired early, baby can be prevented from many social and physical challenges. Otherwise, permanent special care by psychiatrist and other heath team is required.[9]
CL is a gap or split in the upper lip and CP is a gap or split in the roof of the mouth. It is due to inappropriate development of lip and roof of mouth. Different congenital and environmental factors are involved in causing CLP. [10]

Head and face is developed from five primordial prominences.

1. Fronto-nasal prominence.
2. Two Maxillary prominences, one from each cheek unite with fronto-nasal prominence and form the upper lip.
3. Two mandibular prominences form lower lip. [11]
   Premaxillary part is in front of incisive fossa, which constructs the anterior palate. Palate is formed after the upper lip development, during union of palatine shelves above tongue different teratogenic agents externally and internally can affect this union and cleft is formed.[11]

Classification of cleft lip and palate

a) According to location, relative to incisive fossa as
   - Primary anterior to the fossa
   - Secondary posterior to the fossa

b) Unilateral and bilateral, which are further sub classified into three groups. Pre alveolar, post alveolar and alveolar. [12]

c) According to the structures involved.
   - Complete (soft and hard palate)
   - Incomplete (simple hole in roof of the mouth, split uvula and sub mucus cleft palate (SMCP). [13]

A microform cleft is a mild form of CL, which can appear as small as a little dent in the upper lip, which looks like a scar from nostril to the lip.[14]

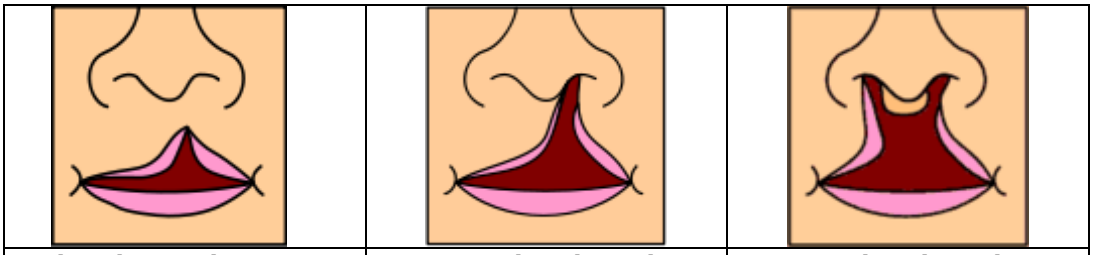

Figure No.1: Unilateral and Bilateral Cleft Lip [13]

Clefts can occur on other parts of face also, e.g. Paul Tessier's clefts.[15]

A considerable numbers of cases of CLP have associated abnormalities. Number of anomalies in new born babies varies from as low as 4.3% to as high as 63.4%, whereas in CP this is 47% out of which 13% are skeletal. [16]

Most common anomalies reported are of central nervous system & skeletal system followed by urogenital & cardiovascular systems.[17]

Preterm born babies have 22% allied anomalies. [18]

Babies having both CLP had 28% allied anomalies, a study revealed in Sweden, in which cardiovascular deformity was found 24% and multiple deformities 15%. [19]

It was observed that 10% of congenital anomalies are environmental, 10% are genetic, but 80% are due to both genetic and environmental complex.[20]

MATERIALS AND METHODS

Study Settings: Newborns with Cleft Lip or Cleft palate alone or both visited with their mothers in different teaching hospitals of Lahore with facility of treating CLP under six months of age from 1st January 2014 to 31 December 2014. Diagnosis of CLP was confirmed by concerned doctor. Case and controls with Genetic history and cousin marriage were not taken, cases and controls with consent from their mothers or relatives were taken. It was case control study with convenient sampling. This study has been approved by King Edward Medical University Lahore, Advanced Board of Study in December 2013.

Interview: Mothers of study subjects were interviewed according to designed Questioners and set proforma, with demographic, medical, obstetric history, habits and occupation and use of medicine from religious Ammil for birth of male baby during 1st trimester of pregnancy. After taking history of mothers, cases were examined, diagnosis was confirmed by concerned specialist and photographs were taken.

Data analysis: Odds Ratio was estimated and 95% confidence intervals and SPSS, 20.00. Duration of exposure was described by Mean ±SD.

RESULTS

Figure No. 2: Bilateral Cleft Lip not United with Nasal Septum, Anterior and Posterior Cleft Palate

Identification of environmental factors are crucial in order to formulate prevention strategies. Maternal exposure to steroid unknowingly from religious Ammil or quakes have been associated with cleft lip and palate. There were 12% mothers of cases and 7.4% mother of control gave history of taking medicine from religious Ammil for birth of male baby during their pregnancy. Odds ratio was significant showing 1.71 times more risk if the mother took medicine from religious Ammil for birth of boy during pregnancy.

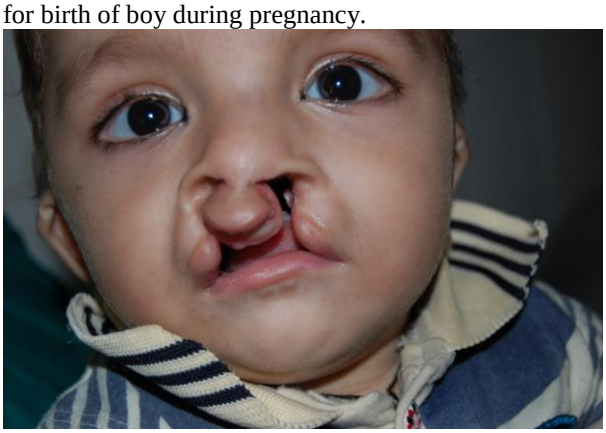

Figure No. 3: Unilateral Cleft lip and palate

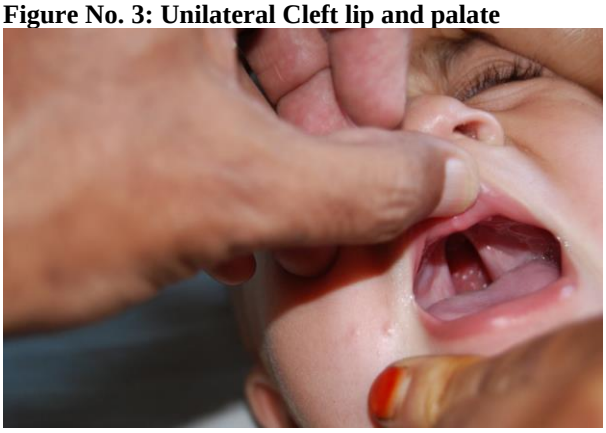

Figure No. 4: Posterior Cleft Palate

Table No.1: Association of "use of medicine during pregnancy for birth of boy from religious Ammil"

	Cases	Control
Yes	12%	37(7.4%)
No	888%	463(92.6%)
Total	100	500

Odds Ratio = 1.7

DISCUSSION

Different countries studies have different findings relevant to this study. A number of environmental factors have been concerned in the formation of cleft lip and or palate.[11]

Medicine taken by Religious Ammil possibly steroids for birth of boy has been considered as a possible etiological factor increasing the incidence by 1.71. Ammil mostly gives steroid which break the circuit of genes which act on growth factor; a protein that acts on cell division and normal palate development is affected leading to CLP.[21] A relation of systemic use of steroid and cleft palate has been shown (Odds ratio 2.59).[22] In pradat P and kallen B studies.

These studies are comparable with our study.[23]

CONCLUSION

In conclusion, this study demonstrated the role of environmental factors in this geographical area for orofacial cleft forming. In the light of these results it is advisable to develop health care strategies and awareness programs for population at large and specifically for pregnant mothers.

Author's Contribution:

Concept & Design of Study:	Riasat Ali Nehra
Drafting:	Riasat Ali Nehra
Data Analysis:	Raafea Tafweez
Revisiting Critically:	Noor ul Mobeen
Final Approval of version:	Riasat Ali Nehra

Conflict of Interest: The study has no conflict of interest to declare by any author.

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