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Research Article

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Investigating the frequency of Congenital Foregut Anomalies among Neonates referred to Pediatric Surgery Ward of Ahvaz Imam Hospital during 2007-2010

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ABSTRACT

This study aimed to investigate the frequency of congenital foregut anomalies among neonates referred to pediatric surgery ward of Ahvaz Imam Hospital during 2007-2010. This was a retrospective study conducted on the medical records of all of patients with foregut anomalies. Sex, family history, associated anomalies, types of foregut anomalies including esophageal atresia/tracheoesophagel fistula, pyloric atresia, duodenal atresia, hypertrophic pyloric stenosis, gasteroesophageal reflux disease, and foregut duplication among neonates were investigated. Statistical analyses of the data were performed with SPSS. In this study, amount of esophageal atresia/ tracheoesophageal fistula is equal with hypertrophic pyloric stenosis and is higher than amount of duodenal atresia. Pyloric atresia is rare (2 cases). No patient has been admitted with diagnosis of Gastroesophegeal reflux disease and foregut duplication. There is relative increase in male to female. The amount of family history is similar to other investigations. The frequency of associated anomalies is less than other studies, which probably because of failure of diagnosis.

Keywords: Anomalies of the foregut, Esophagus atresia, Duodenum atresia, Hypertrophic pyloric stenosis.

INTRODUCTION

Atresia is the most common type of congenital esophageal. Its prevalence has been 1 in 4000 live births. The associated congenital disorders that are mostly heart malformations were observed in 55% of cases (1, 2). In 85% of infants with tracheal fistula, there was a connection between the distal esophagus and trachea which is called esophangial tracheal fistula (3). In total, surgical correction has satisfactory prognosis in most patients (4). Hypertrophic pyloric stenosis is observed in about 1 in 300 live births. Infants are typically 6-3 weeks old, boy, and first child. Lts causes are still known. Studies have shown that there are several generations of a family. It is not a surgical emergency, but dehydration and electrolyte disorders never appear in the emergency form. Currently, diagnosis and treatment is very satisfactory (4). Symptomatic gastroesophageal reflux disease refers to gastroesophageal reflux disease. Symptomatic gastroesophageal reflux is the most common disease of the gastrointestinal tract engaging in all ages. About 1 case of 350 children experience severe reflux symptoms that require surgical treatment (3). In Duodenal atresia/stenosis, there is high prevalence of birth defects associated with one of the most common congenital diseases. Trisomy 21 is one of the most common congenital diseases. Duodenal atresia in 34% of cases is above than opening of the bile duct and in 66% of cases is lower than it (3). Survival rate after surgery has been reported more than 90% (4). Gastrointestinal duplication cysts are rare disorder of the gastrointestinal tract. About 20% of them have been developed from esophagus. Stomach and duodenum duplication are developed mostly from the large curvature of the, and the posterior edge of dudendum (3). Duplications stomach

is only in 7-4% of all gastrointestinal tracts that more than half of them are diagnosed in early childhood. About 50% of gastric cysts associated with other disorders (4, 5). Duplication cysts Dvdnal gastro intestinal tract comprise 17-10% of the total Dvplykasyvnhay (6). Given the life-threatening nature of the disease and the importance of diagnosis, preoperative care and timely surgery patients given the possibility that differences in prognosis and Western books in statistics with Statistics country and our region and the frequency of congenital diseases foregut visits to our center, having accurate statistics in early diagnosis, providing care, training program of staff and improve the prognosis of the disease are effective.

MATERIALS AND METHODS

Referring to the Archives of Ahvaz Imam Hospital medical records, the data relating to the foregut congenital diseases including congenital disease, sex, family history of these diseases, and associated anomalies were identified. After reviewing and summarizing the information, the data were analyzed. The method of calculating sample size and sampling method: The study population of babies and infants diagnosed with birth defects during the period of three years mentioned foregut Ahwaz Imam Khomeini Hospital were referred to pediatric surgery center. In these cases the diagnosis was based on investigations carried out by the treating physician and as a final confirmation has been given. How non-random sampling was targeted. All babies and infants were among the participants of this study. SPSS software was used for data analysis. Variables include the type of anomalies of the foregut, sex, family history of the disease and associated anomalies.

RESULTS

During the 3-year period, 126 patients with congenital anomalies of the foregut Pediatric Surgery section of Ahwaz Imam Khomeini Hospital were admitted, including 56 cases (44%) esophageal atresia +/- fistula truco esophageal, 55 (44%) stenosis, hypertrophic pyloric, 13 (10%) atresia, duodenum, and 2 patients (2%) with atresia pylori (Figure 1).

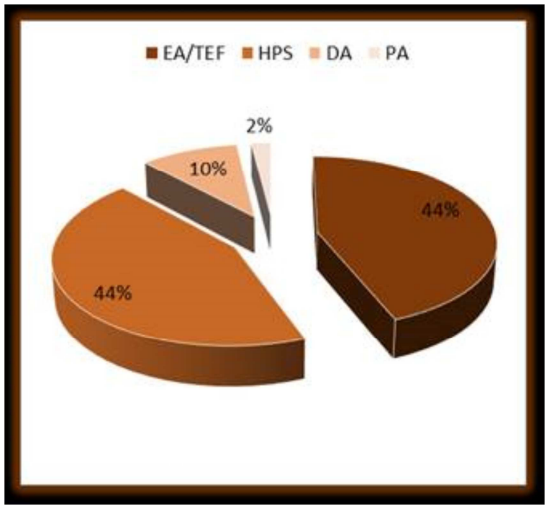

Figure 1. The relative frequency of the foregut anomalies anomaly depending on

In the study group and in a certain period, a patient with foregut duplication and gastroesophageal reflux disease (GERD) wasn't hospitalized.

In Esophageal atresia relative superiority was observed in 32 cases of esophageal atresia in boys (57%) than girls, and 24 cases (43%) (Figure 2).

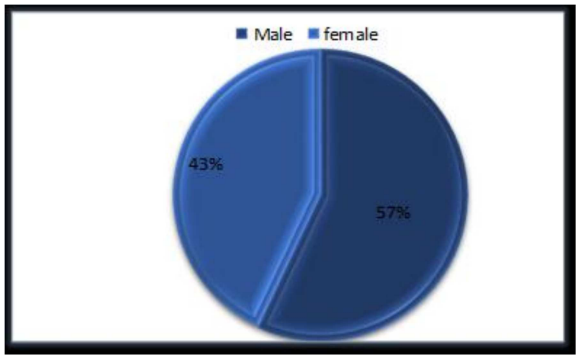

Figure 2. The frequency of genders in infants with esophageal atresia +/- fistula

In the study group
Family history of similar anomalies was similar in infants with esophageal atresia/ truco esophageal fistula 1 (2%), respectively. The associated anomalies in infants with esophageal atresia/ truco esophageal fistula were found in 7 patients (13%) that all anus cases were closed (Figure 3).

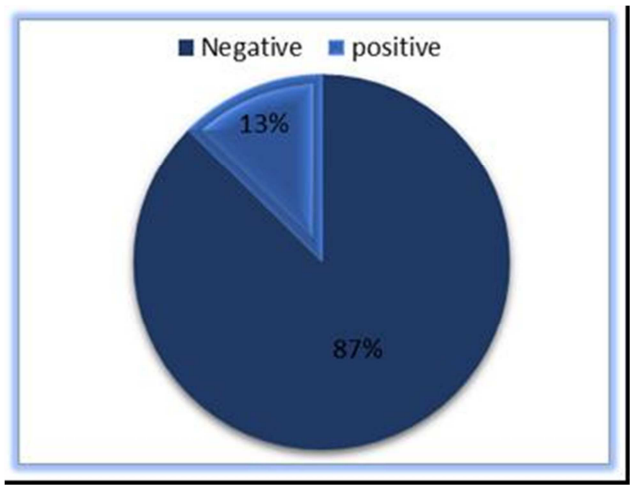

Figure 3. The relative frequency of abnormalities in infants with esophageal atresia and +/- truco esophageal fistula

In the study group
Duodenum atresia: the duodenum atresia relative superiority was observed in 7 boys (54%) than females in 6 cases (46%) (Figure.4).

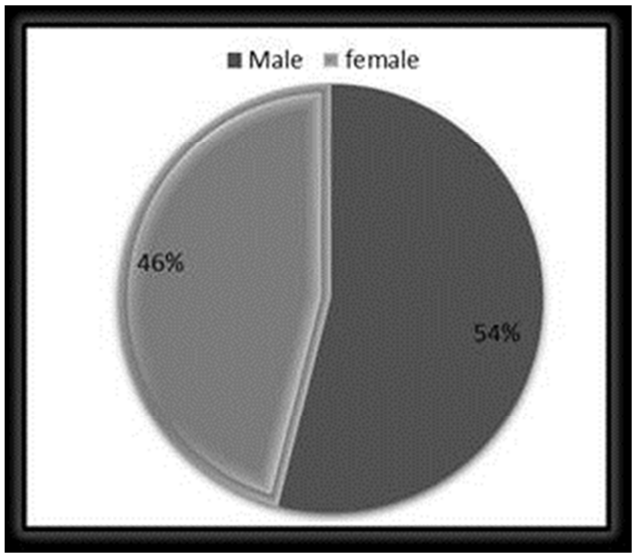

Figure 4. The relative frequency of sex in infants with atresia duodenum in the study group

Family history of anomalies in the duodenum atresia in 2 cases was similar (15%). Anomaly in neonates with esophageal atresia and duodenum is observed in 2 cases (15%) that include a case jejunum atresia and one case of closed atresia. There aren't the signs of Down's syndrome and the karyotype was not conducted. Therefore, none of the duodenum atresia contained in the medical records were associated with Down syndrome.

HPS: Hypertrophic stenosis was more common in the pylorus in the boys 46 (84%) than in girls and 9 (16%) and in infants with 1 patient (2%), respectively. None of the infants had HPS and no family history of congenital anomalies (Figure 5).

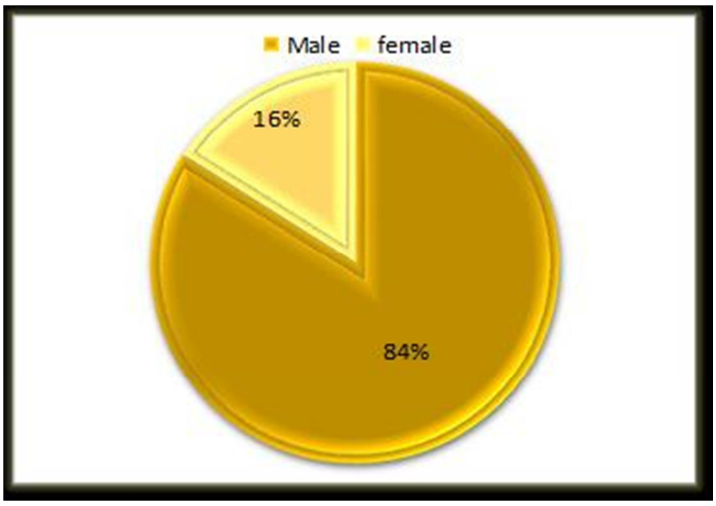

Figure 5. Hypertrophic pyloric stenosis in infants with relative frequency gender

In the study group
Pyloric atresia: There were 2 male patients with pyloric atresia. There weren't pyloric atresia in 2 cases and no family history of the disease. Pyloric atresia was observed two cases associated with other anomalies.

DISCUSSION

In the present study, the 3-years period, 126 patients with congenital anomalies of the foregut surgery section of Imam Khomeini Hospital were referred. In this period, the patient was admitted with Foregut duplication and gastroesophageal reflux disease. There was 1 in 2500-3000 live births according to the text reference books esophageal atresia, atresia duodenum 1 in 2500 live births, duplication GIT 1 in 4500 live births (7). Hypertrophic pyloric stenosis occur 1 in 300 live births (1, 2). In a study of pyloric atresia had a prevalence of 1 in 100,000 live

births (8). The accuracy of reported figures, the incidence of esophageal atresia/truco esophageal fistula atresia and duodenum is approximately equal. The prevalence of hypertrophic pyloric stenosis is about 10 times higher than the 2 above, but in our study the number of patients admitted with a diagnosis of esophageal atresia/stenosis, hypertrophic pyloric truco esophageal fistula and times are almost 4 times the duodenum atresia.

In the current study, the relative superiority of esophageal atresia was observed in boys (57%) than females (43%). In another study, 86 infants with esophageal atresia/truco esophageal fistula in 56 boys and 32 girls (9). Our results were similar to the results of other studies (10-12). In the present study, family history of similar anomalies in infants with esophageal atresia/ truco esophageal fistula was 2%. The text reference books familial cases of esophageal atresia are rare (less than 1% of cases) (7). In another study (13), most cases are sporadic and at the same event in 1% of the family members that the statistics reported in our study are close. In our study, the associated anomalies in infants with EA/TEF were 13% of all cases involving the closed anus. This includes patients on admission and during their hospitalization associated anomalies was diagnosed. The incidence of the associated anomaly has been reported> 50% (7) and 55% (1, 2); therefore the mentioned rate in this study was obtained less than the amount mentioned in textbooks. Chacking the reported statistics revealed that generally the associated anomalies in thus study was statistically lower that was all related to the low portunity to fully assess the infected babies in the Pediatric Surgery section. Moreover, in other studies the affected baby was enrolled as the sample after complete examinations, while our study is retrospective and dep to hospital records.

In our study, the duodenum atresia relative superiority was observed in boys (54%) than females (46%). In other studies, 61 patients with atresia duodenum in 35 boys and 26 girls (14), and among 103 patients atresia duodenum 59 girls and 44 boys (15), and from 169 patients with atresia duodenum 89 girls and 80 were boys (16). A close look at the statistics in some studies reveals the comparative advantage in some sex with boys and girls. In our study, family history of similar anomalies in the duodenum atresia 15% by others (17) the occurrence of familial duodenum atresia was rare. No research has been conducted on the familial history in patients with atresia of the duodenum. In our study, anomalies in neonates with esophageal atresia and duodenum 15%, which include a case of closed anus and one case of jejunum atresia. No signs were noted in the case of Down syndrome and karyotype was not conducted. Therefore, none of the duodenum atresia contained in the medical records were associated with down syndrome. About 50% of the duodenum atresia with other malformations (heart-urogenital, anorectal, esophageal atresia) are associated and over 40% have trisomy 21 (7). Ninty seven patients with duodenum atresia 39 cases (41%) were observed associated with trisomy 21 and congenital heart defects in 37 patients (3.39%) (18). The study of 503 patients with duodenum atresia was more than 50% of other anomalies and 30% associated with down syndrome (19). Compare statistics study with textbooks and other studies show that the associated anomalies in our study were less than others. In other studies, 41-27% in the duodenum atresia associated with down syndrome. In our study no signs of Down syndrome in the medical records of patients with duodenum atresia were mentioned, the karyotype was not done, and none of the duodenum atresia contained in the medical records were associated with Down syndrome. The above statistical difference was usually related to the lack of a thorough review of infants with pediatric surgery department, retrospective type, and dependence of statistics on the examinations in the record and the ability to identify associated anomalies in other centers after being discharged as well as the financial and cultural rejection families karyotypes in Down syndrome. According to the rarity of the disease and the 2 pyloric atresia cases in our study in order to compare the data with other studies, there is no value, and in order to assess the relative frequency of gender, family history, anomalies in patients with atresia of the pylorus, the studies in wider ranges and more cases in the period are required.

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