

## Frequency of Diagnosed Gastrointestinal & Liver Diseases in Paediatric out Patient Department at a Tertiary Care Hospital of Karachi, Pakistan

Sina Aziz, Ahmad Faraz, Shafaq Shahid

Sina Aziz, Ahmad Faraz, Shafaq Shahid, Department of Paediatrics, Karachi Medical & Dental College, Abbasi Shaheed Hospital, Karachi, Sindh, Pakistan

Correspondence to: Ahmad Faraz, Department of Paediatrics, Karachi Medical & Dental College, Abbasi Shaheed Hospital, Karachi, Sindh, Pakistan.

Email: farazdr@live.com

Telephone: +923353040764

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### ABSTRACT

**AIM:** To assess the frequency of diagnosed gastrointestinal diseases in the paediatric outpatient department of Abbasi Shaheed Hospital.

**METHODS:** A retrospective cohort study was conducted at Paediatric unit-II of Abbasi Shaheed Hospital (from February 2013 to March 2015). tertiary care hospital, sample size of the study was 101, of age between 1 month to 11 years, patient admitted from Emergency Room have been excluded. All analysis was performed using SPSS 20.

**RESULTS:** Out of 101 patients, there were 43 (48.8%) males & 45 (51.2%) females, of which age range was  $3.019 \pm 0.99$ , 16 patients were referred to other hospitals & 13 were lost to follow up.

**CONCLUSION:** the study concludes that Celiac disease & Hepatitis B, C were the most prevalent disease in our set up of Paediatric patients.

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**Key Words:** GIT; Liver; Paediatrics OPD

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### INTRODUCTION

Gastrointestinal diseases are most common clinical manifestations among the pediatric practice which encompass spectrum of diseases such as infantile colic, GERD, vomiting, coeliac disease, malabsorption syndromes, hepatic diseases, acute diarrhea, chronic constipation<sup>[1]</sup>. Current advances in medical sciences report that Gastrointestinal diseases affect 60 to 70 million Americans annually, GI disease attributes to substantial number of deaths throughout the world, ultimately leading to utilization of millions of money on these diseases through direct & indirect costs<sup>[2]</sup> Hence detailed statistics illustrates the prevalence of Gastrointestinal diseases are required, reports detailing burden of GI diseases can only be constructed if the prevalence of the disease is known.

Gastrointestinal disease in paediatric include various diseases of which celiac disease is the most prevalent, affecting large number of children, Laass. MW *et al* reported that the prevalence of celiac disease found to be 0.9%, of which most of the cases were undiagnosed until a preventive tissue transglutaminase test was done<sup>[3]</sup>. However the most astonishing news that 90% of the celiac disease remain underdiagnosed in Pakistan till many years,

Poorly treated celiac disease can lead to complications such as anemia, stunted growth, intestinal lymphoma so it's a mere responsibility of pediatric physicians to rule out and diagnose celiac disease<sup>[4]</sup>. Antiendomysial and Anti Tissue transglutaminase antibodies are positive in paediatric patient but biopsy is often more sensitive<sup>[5]</sup>.

Hepatitis B & C leads to significant disease in children globally, acute hepatitis are rare but chronic asymptomatic infections are second most common hepatic infections, which carries a risk of chronic liver disease and hepatocellular carcinoma<sup>[5,6]</sup>, Hep B virus infected individuals are mostly diagnosed when they present with acute hepatitis, ultimately complicating into fulminant hepatic failure<sup>[5]</sup>. Most of the time hep B infections undergo perinatal transmission, which can be prevented by vaccination at the birth, immunoprophylaxis of HEP B positive mother and babies are effective methods of prevention<sup>[7]</sup>.

Chronic diarrhea is another common presenting complain seen in the paediatric practice, persisting for 2 weeks or longer, with or without increase in frequency of stool, whereas acute diarrhea resolves in two weeks of time period, with a treatment of antibiotics, chronic diarrhea requires detailed examination and investigations, most common causes that are seen under clinical practices include are functional disorders, malabsorption syndromes, inflammatory bowel disease including Crohn disease or ulcerative colitis<sup>[8]</sup>. Weldearegawi. B et al reported that Sepsis, prematurity and asphyxia and acute lower respiratory tract infections were the commonest cause of deaths in infants<sup>[9]</sup>. Gastrointestinal diseases encompass spectrum of the rare diseases such as upper GI bleed, due to various causes ultimately complicating into anemia, hypotension<sup>[10]</sup>. Another article reveals that leading cause of infant death was congenital malformations & chromosome abnormalities were most common abnormalities, disorders related to short gestations and low birth weight were second, others include hemorrhagic complications during pregnancy, neonatal sepsis, where as in childhood, traffic accidents sepsis secondary to respiratory tract and UTI<sup>[11]</sup>. Current descriptive statistics describing the toll of gastrointestinal diseases are necessary to guide research, education and resource allocation. Reports detailing the burden of gastrointestinal disease have been published and are frequently utilized for these endeavors. Very little data from a tertiary care setup but has valuable data regarding gastrointestinal and hepatic diseases at a paediatric out door patients.

## METHODS

This is a retrospective cohort study. This study was conducted among pediatric patients reported to Outdoor patients at Abbasi Shaheed Hospital, Karachi. Age-range for study population was 1 month to 12 year child, both male & female patients will be included in our study. This study is conducted from August 2014 to August 2015. We took data from pediatric patients reported to Outdoor patients at Abbasi Shaheed Hospital, Karachi, during last one year. Our sample size is 101, calculated through results from OpenEpi, Version 3, and open source calculator— with a confidence interval of 95% &  $p$  value<0.05. A self-administered questionnaire is designed on the basis of our experience, brain storming, and modifications of previous researches, was filled in by the selected sample population asked. The questionnaire includes a variety of questions which includes demographic data, comorbid, diagnostic tool, short clinical history, treatment given. We will analyze the data using SPSS Version 20.0 statistical analysis (IBM, Corp, Armonk, NY, USA). We considered  $p$ <0.05 as statistically significant. We will also apply descriptive frequency test to analyze the disease.

## RESULTS

Out of 101 patients, 16 patients were referred to other hospitals & 13 were lost to follow up. In the study, there were 43 (48.8%) males

**Table 1** Most common diseases in paediatric out patient department.

Disease	No. of patients
Celiac disease	18(20.45%)
Hepatitis B	14(19.4%)
Hepatitis C	13(18.1%)
others	43(48.8%)

& 45 (51.2%) females, of which age range was 1 month to 5 year patients were 31 patients (35.2%), 6 to 10 years 36 (40.9%), above 10 were 21 (16.7%) patients.in two year time span, there were 18 patients with Celiac disease 18,Hepatitis B patients were 14 (19.4%), Hepatitis C 13 (18.1%) were most frequently reported, 11 patients of Hepatitis A, there were 7 patients (9.7%) of IBD & biliary atresia 4 (5.6%), other diseases were with primary sclerosing cholangitis, liver abscess & Helicobacter Pylori were 3 (4.2%), hydatid cyst 2 (2.8%),there were few patients with abdominal kock's & esophageal stricture with frequencies of 1.4%.Study also reports that liver biopsy was performed for 6 patients as per need, of which 2 patients were diagnosed with cirrhosis due to alpha -1 trypsin enzyme deficiency, 2 with Glycogen Storage disease & 1 (1.4%) each with Hereditary tyrosinemia, Peptic ulcer disease, Mucopolysacchroidoses type III, choledochal cyst & Pilonidal sinus (Table 1).

## DISCUSSION

Gastrointestinal diseases are the broad spectrum of diseases of which the most common are celiac disease and Hep B,C are common diseases, these diseases have a high prevalence among the pediatric population, furthermore clinician most of the times find it difficult to diagnose the Gastrointestinal disease where the presenting is always abdominal pain<sup>[12]</sup>.

G.I related diseases include celiac disease which was the most common disease presented to outdoor patient which was found to be 17.8%, where as in an another study it was found to be 7%, which was low In comparison<sup>[3]</sup>, furthermore there were also underdiagnosed cases of celiac disease, similarly tissue transglutaminase were positive in 61.1% of the patients with celiac disease in our study, whereas Trovato. CM et al in his study reported that paediatric patients with seropositive TTG were 68.5%<sup>[13]</sup>, patients with the celiac disease develop polyautoimmunity<sup>[14]</sup>, Unusual high rate of incidence of celiac disease has been reported in study conducted at Sweden, during 40 year time period 1030 patients have celiac disease<sup>[15]</sup>, another article reported the prevalence of celiac disease which is found to be 4.1%<sup>[16]</sup>, whereas its frequency among children of Germany is found to be 0.9%<sup>[3]</sup>.

Hepatitis B is also a common disease in pediatric patient in our set up, its prevalence was found to be 19.4 % in our study, which was almost near to another study which reported incidence of 15.9% of the children, in which Hep BsAg were positive<sup>[17]</sup>, Ie SI *et al* reported that 29.7% of children were found positive with the hepatitis B<sup>[18]</sup>, most of the patients with Hepatitis B are chronic hepatitis B cases, most of the times Hep B cases are recognized at the time when they are complicating into fulminant hepatic failure<sup>[5]</sup> therefore children should be properly screened for Hep BsAg, and should be vaccinated at the time of birth according to the EPI schedule.

In this study hepatitis C was positive in 15.1 % of the cases, patients get infected from Hepatitis C virus secondary to the blood transfusion in childhood, long term follow up of the paediatric patient has reveal incidence of cirrhosis up to 13% during a time period of 30 years<sup>[19]</sup>, therefore it is essential to identify children at the time of birth, with the help of screening tests, one birth-cohort screening

beginning can identify 487,000 cases of HCV infection in the next 10 years, In contrast, 1-time universal screening could identify 933,700 case<sup>[20]</sup>, this article highlights the significance of screening children at the time of birth for Hepatitis C infections.

Children with increase travel to tropics are at a higher risk of hepatitis A infections as compared to the adults, most commonly due to the food borne illnesses, hepatitis A infection frequency in this study is found to be 10.8%, hepatitis A can be prevented through vaccination at child hood, prevalence of hepatitis A infection is higher in region where food & water are of no quality control commonly in the rural areas<sup>[21,22]</sup>, prevalence of hepatitis A in paediatric patient of Iran was 70%<sup>[22]</sup>.

There were few cases with the certain rare diseases such as 7 patients (9.7%) of IBD & biliary atresia 4 (5.6%), other diseases were with primary sclerosing cholangitis, liver abscess & *H. Pylori* were 3 (4.2%), hydatid cyst 2 (2.8%), there were few patients with abdominal kock's & esophageal stricture with frequencies of 1.4%.

## CONCLUSION

Celiac disease, Hepatitis B and Hepatitis C are the most common diseases seen at paediatric clinics at tertiary care setup, therefore steps must be taken for the prevention of these diseases.

## CONFLICT OF INTERESTS

The authors declare that they do not have conflict of interests.

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**Peer reviewers:** Niels Halama, National Center for Tumor Diseases, Department of Medical Oncology / Department of Internal Medicine VI, University Clinic Heidelberg, Im Neuenheimer Feld 460, 69120 Heidelberg, Germany; Abdel Samie, M.D., FEBGH, FEFIM, Consultant Gastroenterology, Medizinische Klinik II, Pforzheim Hospital, 75175 Pforzheim, Germany; Natthawut Kaewpitoon, PhD, Head of Parasitic Disease Research Center, Institute of Medicine, Suranaree University of Technology, Nakhon Ratchasima, Thailand.