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Short Communication

Gastrointestinal Disease Spectrum and Mortality in Hospitalized Children in Southern Iran

KhS Najib[1], E Fallahzadeh[2], MH Fallahzadeh[3], MK Fallahzadeh[1]*

[1]Department of Pediatrics, [2]Department of Internal Medicine, [3]Nephro-Urology Research Center, Shiraz University of Medical Sciences, Shiraz, Iran

Abstract

Background: In medicine, especially in pediatrics, it is necessary to perform regular epidemiologic studies in different geographic regions. This study was performed in Nemazee Hospital, Shiraz, southern Iran to determine the gastrointestinal (GI) disease spectrum, the mortality and also the rate of matching final diagnosis with the initial impression in pediatric GI ward.

Methods: Of all the children older than 1 month (2731) who were admitted in Nemazee Hospital during one year, 653 patients were suffering from GI diseases. A questionnaire was used on admission and patients were followed till discharge or death.

Results: 56.8% of patients were male (M:F ratio=1.31). Patients with GI diseases (except 355 diarrhea cases) were 298 (59.9% male) with an age range of 31 days to 22 years (mean=5.67; SD=5.05 years). Sixty seven percent of patients admitted to GI ward were from Fars Province, southern Iran. The most common GI diseases were hepatitis (9.14%), gastroesophageal reflux (7.66%), intestinal polyp (6.68%), cirrhosis (6.38%) and primary peritonitis (5.47%). Definite diagnosis was achieved in 91.2 % and in 46.7 % of patients it was compatible with the initial impression. While the total mortality rate was 5.3%; this rate was 3% for the patients in GI ward.

Conclusion: GI diseases are the common cause of pediatric admissions with low mortality and the final diagnosis is not compatible with the initial one in most cases.

Keywords: Pediatric; Hospitalization; GI Diseases; Diagnosis; Mortality; Iran

Introduction

In medicine, especially in the field of pediatrics, it is necessary to know epidemiologic pattern of diseases and causes of death in different geographic regions and in different age groups. The health status among the nations widely depends on the 1) prevalence and ecology of infectious agents and their hosts; 2) climate and geography; 3) educational, economical, social and cultural considerations; 4) stage of industrialization and urbanization; and 5) in many instances, the gene frequencies for some disorders.[1,2]

So health system management, including prevention, treatment and continuous education of the physicians, hospital staff and general population can be very helpful. This study was carried out in Nemazee Hospital, the major referral pediatric center in southern Iran to determine the disease spectrum, mortality rate, causes of death and also the rate of matching final

***Correspondence:** Mohammad Kazem Fallahzadeh, MD, Pediatric Department, Shiraz University of Medical Sciences, Shiraz, Iran. P.O. Box: 7193711351. Tel: +98-711-6265024, Fax: +98-711-6265024, e-mail: kazem.fa@gmail.com
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diagnosis with the initial impression in pediatric gastrointestinal (GI) ward.

Materials and Methods

All children older than 1 month (2731) who were admitted in Nemazee Hospital from November 2005 to October 2006 were studied for the disease type, mortality rate, final diagnosis and its compatibility with the impression at the time of admission. All the patients and/or their historians were interviewed through a questionnaires on admission and were followed till discharge or death time. In some patients, the final diagnosis or cause of death was unclear at the time of discharge; therefore, follow up in the clinic up to the completion of the workups was continued.

In ICD-10 classification, gastroenteritis is considered in the infectious group; so it was not included in GI diseases in this study. The patients were divided into 5 groups according to age including 1) 31 days to 12 months; 2) 13 to 24 months; 3) 3 to 6 years; 4) 7 to 14 years; and 5) more than 14 years. Division of disease categories was done on the basis of ICD-10. Finally, the data were analyzed by SPSS software (version 11.5, Chicago, IL, USA) and Chi-Square test. A P value less than 0.05 was considered significant.

Results

Of all patients (2731), 56.8% were male, with male to female ratio (M/F) of 1.31, while in GI patients (298), this ratio was 1.49; it was 0.84 in 355 patients with gastroenteritis. The age range of the patients was 31 days to 22 years (mean=5.67; SD=5.05 years). By considering gastroenteritis, GI diseases were the most common group (25%) of diseases leading to pediatric admission. If gastroenteritis is not considered, GI diseases were the third most common group (10.75%). The most common GI diseases were hepatitis A (9.14%), gastroesophageal reflux (7.66%), intestinal polyp (6.48%), cirrhosis (6.38%), spontaneous bacterial peritonitis (5.47%), ulcerative colitis (4.55%), biliary atresia (3.95%), gastroschisis (3.95%), Mallory-Weiss syndrome (3.64%), esophagitis (3.64%), lymphoid nodular hyperplasia (3.64%) and others (41.5%). About one third of the patients referred from other provinces.

The most common chief complaint was rectal bleeding (16.77%). Definite diagnosis was determined in 91.2 % and changed the initial impression in 53.3%, while in other wards it ranged from 86.4 to 93.4% (*P value*=0.01). The duration of admission ranged from 1 to 42 days (mean=5.04, SD= 4.69 days). Age range and mortality of GI patients in different age groups is illustrated in Table 1. All of the mortalities in GI patients were after 24 hours of admission and 80% were female.

Discussion

Unfortunately, there is not enough data available on pediatric hospital admissions in different centers to be compared. In the few available reports, age range of the selected patients is variable and this can affect different aspects of results including the mortality. In general, the number of boys was more than girls in all groups of diseases,[3] including the GI diseases (except for gastroenteritis which was female predominant).

The age group of less than 2 years was the most common age on admissions and the majority of them were under 1 year, which is in agreement with another study.[2] This indicates that this age group has a higher risk for diseases. Digestive system diseases (21.16%) were the most common cause of referral from other provinces which can be due to absence of pediatric GI-specialists in the majority of these provinces or referrals for liver transplantation in Shiraz, which is the only center at present in Iran.

In one study at the Eldoret District Hospital of Kenya, malaria was the most common disease and pneumonia, gastroenteritis (10%) and measles comprised about 72% of 3216 pediatric admissions.[4] In a report from Medan in 1991 about 40% of pediatric admissions was due to gastroenteritis with mortality rate of

Table 1: Age distribution and mortality in patients with GI diseases.

Age	2-12 months No. (%)	13-24 months No. (%)	25 months to 6 years No. (%)	7-14 Years No. (%)	Older than 14 years No. (%)
Patients	62(20.8)	49(16.4)	76(25.5)	86(28.9)	25(8.4)
Mortality	4	1	1	4	0

8.07%.[5] In this center, hepatitis A was the second most common GI disease (after gastroenteritis) in admitted children with a rate of 1.1% of total hospital admissions, as compared to 0.4% in another report.[4] In close follow up of patients in other reports, the great proportion of deaths (more than half) occurred during the first 24 hrs of hospitalization,[3,4,6,7] while in our center this rate was only 36.7% in different pediatric wards. Considering the GI diseases, about 80% of deaths were in girls and none of the mortalities occurred during the first 24 hours which can be due to excellent care and/or less severity of the diseases on admission while in other reports, the mortality rate ranged from 8.2 to 30%.[6-8]

Although GI diseases are common in hospitalized children, mortality rate is low especially during the first day of admission and the final diagnosis will change in most of them.

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