

Epidemiological study for common causes of diarrhea disease among children under 5 years of age in some Iraqi province.

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Abstract

Background: Acute diarrheal disease among children less than 5 years old remains a major cause of morbidity and mortality worldwide. Severe infectious diarrhea in children occurs most frequently under circumstances of poor environmental sanitation and hygiene, inadequate water supplies, and poverty. In Iraq the control of diarrheal disease (CDD), including promotion of breast-feeding, oral rehydration therapy and specific health education is a part of national strategies aiming to improve the quality of life and reduce the burdens caused by diseases.

Objectives: the study aimed to identify the most common causes of diarrheal disease among children aged less than five years admitted to pediatrics Hospitals in some Iraq province.

Patient and method: Hospitals in five Iraq provinces, karbala, Dyala, Hila, and Najaf during 12 months of 2013 received 1639 cases of diarrhea disease among children under 5 years of age, a hospital – based cross sectional study was performed a respective cases was defined as a child having three or more loose, liquid, or watery stools or at least one bloody loose stool within the last 24 hours. Accordingly, all cases admitted to general pediatrics Hospital between January and December 2013, which fulfilled the inclusion criteria were recruited into the study.

Results: in current study shows statistical prevalence to bacteria spp. (0.006) and Giardiasis among Dyala province at p. value (0.001) as well as highly significant difference between Entamoeba. Histolytica. and Karbala city at p. value (0.001), among other pathogens in our study provinces.

Conclusion: our study revealed some of pathogens can lead to cause diarrhea disease among children under 5 years of age especially E. histolytica and Giardia Lamblia in some Iraq province so demonstrate poor hygiene and educational health and inadequate safe water supply and food safety. caused by diarrhea among children less than five years of age in the district.

دراسة وبائية لمسببات مرض الإسهال الشائعة لدى الأطفال دون سن الخامسة من العمر في بعض المحافظات العراقية

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الخلاصة :

يعد مرض الاسهال للاطفال دون سن الخامسة من العمر من الاسباب الرئيسية للاصابة والوفاة عالميا. سوء الظروف البيئية وعدم توفر الماء الكافي والمعقم, العوامل التي ادت الى انتشار المرض . وفي العراق فقد تضمنت الدراسة المقطعية للاطفال في المستشفيات التعليمية للاطفال في محافظات ديالى، الحلة، النجف وكربلاء وكانت عدد الاصابات 1639 حالة تعاني من الاسهال من الاول من كانون الثاني ولغاية 31 كانون الاول من سنة 2013 وقد تم اجراء فحص الخروج العام لكافة العينات والحصول على النتائج وتحليل البيانات لمعرفة اهم المسببات الشائعة للاسهال وقد اشارت النتائج الى معنوية عالية للاصابة بالالتهابات البكتيرية والجارديا للاطفال في محافظة ديالى (0,006), (0,001). وكذلك المعنوية العالية في محافظة كربلاء للاصابة بالاميبا الزحارية (0,001) مقارنة بالمسببات المرضية الاخرى في المحافظات التي تضمنتها الدراسة. وهذا نتيجة الوضع البيئي المتردي وعدم توفر الماء الصالح وعدم الاهتمام بسلامة الغذاء وقلة الوعي الصحي للام والطفل في المجتمع.

Introduction:

It is over 150 years since John closed the Broad Street pump after a cholera outbreak and thereby initiated the debate on diarrheal disease risk factors and their elimination(1). Today diarrhea remains a major public health problem. In developing countries, diarrhea is among the leading causes of children morbidity and mortality. An estimated one billion episodes and 2.5 million deaths occur each year among children under five years of age. About 80% of deaths due to diarrhea occur in the first two years of life (1, 2). Although the majority of diarrheal episodes are not severe and may not require specific intervention, a large number are potentially fatal (3). Diarrhea is the most important public health problem connected to water and sanitation and can be both "water- washed" . In recent decades, a consensus developed that the key factors for the prevention of diarrhea are sanitation, personal hygiene, availability of water and good quality drinking water; and that the quantity of water that people have available for hygiene is of equal or greater importance for the prevention of diarrhea as the bacteriological water quality (4). In Iraq diarrheal diseases is the second common cause of mortalities among children (5). According to the annual report of the Iraqi ministry of Health childhood diarrhea is increasing during the last decade, particularly following the last war in 2003 and the sanitary condition with general hygiene all over Iraq had been deteriorating(6). Since identification of pathogens with clinical presentations, would help local health care providers to reduce morbidity and mortality due to bloody diarrhea (5).

Patient and method :

During the period from January to September 2013, a total of 1639 cases of diarrheal disease received to parasitological department cases for a children under 5 years of age in some Iraqi province Dyala , Hila, Karbala, and Najaf. The data collected from patients

recorder in pediatrics hospital of all regions as a retrospective cross-sectional descriptive study which done for all of them general stool examination to identify causes of diarrhea disease in medical laboratory and exclusion rotavirus .Statistical data analysis by SPSS program (version 20) for Microsoft Windows.

Inclusion criteria :

All children under five years of age having diarrhea disease admitted pediatrics hospital.

Exclusion criteria :

All cases send to diagnosed rotavirus in general health laboratory/Baghdad and those repeated general stool examination also cases which loss history in registration system.

Results:

Figure 1 shows percentage of diarrhea cases 24.59%, 24.41%, 30.51%, 20.50% among four Iraqi province Dyala , Hila, Karbala, and Najaf respectively, as well as there are (934) cases of female diarrhea while (705) cases of male in this study among four Iraqi province that shown in figure 2.

Figure 1:diarrhea cases according to the region.

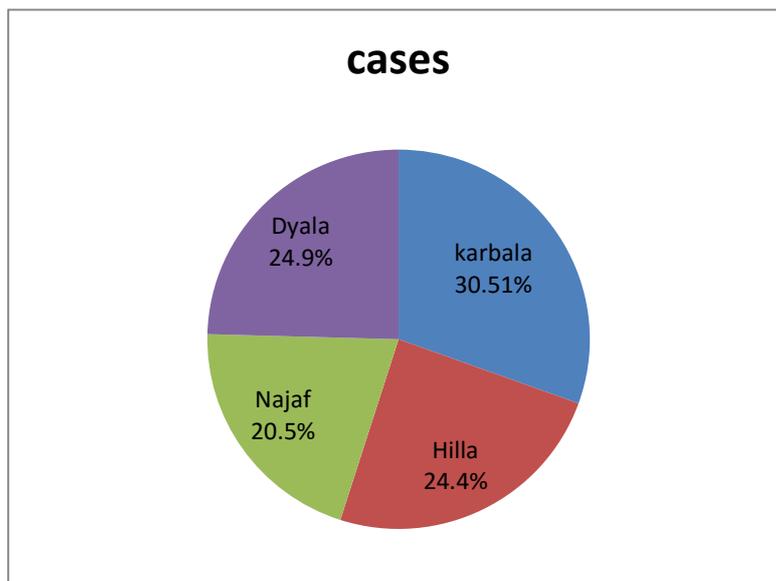


Figure 2:diarrhea cases according to the gender.

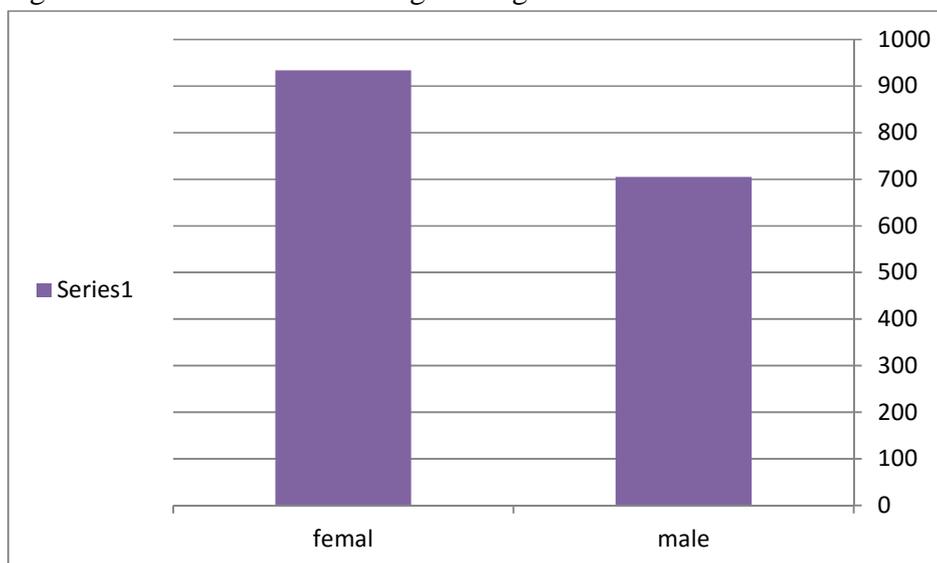


Table 1 shows prevalence of bacteria spp. In Iraq province which high percentage (34.2%) in Dyala and (65.8%) among other province in the study with P value (0.006).

Table 1: Distribution bacteria spp. according the region.

Bacteria_Spp* region Crosstabulation	Region				Total
	Dyala	Hilla	Karbala	Najaf	
CountOthers pathogens No. %	363 23.9	380 25.0	474 31.1	305 20.0	1522 100.0
count bacteria spp No. %	40 34.2	20 17.1	26 22.2	31 26.5	117 100.0
CountTotal No. %	403 24.6	400 24.4	500 30.5	336 20.5	1639 100.0

P value= 0.006

Note: chi-square significant value less than 0.05

Table 2 show high percentage of Giardia in Diyala city (33.7%) is higher other cities in our study, which all of them (66.3%), P value (0.001).

Table 2 : Distribution Giardia lamblia according the region

Giardia lamblia* region Crosstabulation	Region				Total
	Dyala	Hilla	Karbala	Najaf	
Count other pathogens	144	193	306	227	870
%	16.6	22.2	35.2	26.1	100.0
Count Giardia L.	259	207	194	109	769
%	33.7	26.9	25.2	14.2	100.0
Count total	403	400	500	336	1639
%	24.6	24.4	30.5	20.5	100.0

P value==0.001

Note:chi-square significant value less than 0.05

There was high prevalence of Entamaeaba. Histolytica in Karbala province (37.2%) and all other province by detection parasite was (62.8%) with P. Value(0.001), that is show in table 3.

Table 3: Distribution of Entamaeaba.hist. according the region

Entamea hit* region Crosstabulation	Region				Total
	Dyala	Hilla	Karbala	Najaf	
Count other pathogens	299	227	220	140	886
No %	33.7	25.6	24.8	15.8	100.0
Count Entamae.hist.	104	173	280	196	753
No %	13.8	23.0	37.2	26.0	100.0
Count total	403	400	500	336	1639
No %	24.6	24.4	30.5	20.5	100.0

P value= 0.001

Note :chi-square significant value less than 0.05

Discussion

Diarrhea disease constitute a major health problem in many developing countries, predominantly due to poor sanitation and inadequate personal hygiene. In our study, the prevalence of diarrhea cases among some Iraqi province during 2013 among Karbala city (30.5%) there is higher prevalence than other province Dyala, Najaf, and Hila. This increased prevalence might be to immigration to a holly city also improved registry system in laboratory of pediatric Hospital, as well as it is only one general pediatric hospital in this city. The number male diarrhea cases was (705) lower than female (934) which agree with finds (7).and disagreement with other studies (8). That explained by (9), biologically, females have a greater chance of survival than males. In current study showed increase of prevalence bacteria spp. Among faces of children in Dyala city

(34.2%) compared with other city included in study with significant difference P value (0.006). Agreed with find study, which recorded virulence of bacteria in child of Dyala provinces (10). Our study present highly prevalence of giardia Lamblia among child of Dyala province compare with other province in study were highly significance value (0.001). That similar with finding study (11) the explanation of this result may be due to use insufficient concentration of chloride to sterilize water or to contamination of tap water with sewage (12). Also in the summer season, there are increase of the fly and cockroaches population, this may contribute to increase in giardiasis incidence, which we found in other results (13). In addition to the foregoing the rural communities with high prevalence in intestinal parasites due to decreased of hygiene. The sanitation and low of personality of cleaning because of many different poverty, ignorant and uneducated peasant (14). Among fecal examination to child Karbala city appears highly prevalence of *E. histolytica* (37.2%) when compare with other province of study (62.8) that agreement with finding (15) that reported highest prevalence of *E. histolytica* in Karbala city (67.6%) from other parasitic in fecal examination cases, which explained by the rout of direct transmitted the parasite cross water and food contaminated with cyst *E. histolytica* and resistance the last to the chemical sterilization and poor personal hygiene and education which led to infection. The differences in prevalence parasite may be due to the nature of areas, socio-economic , educational and nutritional status, personal and community hygiene, and the methods used in examination of fecal samples (16).

Recommendation :

From these findings, we recommend to encourag mothers, through education, to wash their hands before feeding their children or after going to toilet should be a priority. Improving hygienic practice in the community through education programs participated by volunteers, mothers' support groups, health workers, mass media; building kindergartens in all villages and establishing intersectoral collaboration are the main methods we wish to recommend in order to improve public awareness of diarrhea, as well as improved on safety food & adequate water supply, eventually aiming to reduce burden

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