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PREVALENCE OF MENINGITIS DISEASE AMONG HIGH RISK GROUPS IN IRAQ

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ABSTRACT

Background: Meningitis is a serious and widespread disease that can lead to death or permanent disability if the infection is severe or delayed. **Aim:** To identify the high risk groups and regions in Iraq. **Method:** A retrospective cross sectional study undertaken in the Statistic department of MOH in Baghdad, Iraq. Information regarding vaccination and history of contact with a case of meningitis was obtained. Detailed clinical examination was done. Statistical analysis was done by using the software package for social studies (SPSS) version 19. The categorical variables were presented as number and percentage. **Result:** A total of 2046, the highest percentage of cases (50.2%) still in the age groups less than 10 years, male cases (58.6%) were higher than female cases (41.4%). (49.9%) of cases had viral types, followed by (46.2%) had bacterial type. rate of meningitis was higher in Kerbela province 3.08, followed by Wasit province 2.23 and in Baghdad was 1.4 and was less in Al-Anbar 0.01. **Conclusion:** The majority of cases were under age less than 10 years; viral disease is common type, the rate of disease was higher among south region in Iraq. Protection of high-risk groups (such as those with complement deficiencies, laboratory workers, migrants and refugees) is recommended.

KEYWORD: Meningitis, Age, Viral, Gender, Rate.

INTRODUCTION

Meningitis is a serious and widespread disease that can lead to death or permanent disability if the infection is severe or delayed.[1] It can be caused by bacteria, virus, or reaction to some medications. It often affects children under 5 years of age.[2] Meningococcal meningitis is a major cause of 1.2 million infections worldwide and 135,000 deaths annually.[3] There are no extensive statistics on the prevalence of the disease in the Middle East and North Africa due to the absence of routine surveillance.[4] However, when screening for meningococcal bacteria using advanced laboratory methods, it is found to be one of the most common causes of meningitis in children, including Streptococcus susi and H. influenza type B bacteria.[5] Despite proper treatment, 10% of patients with meningitis remain at risk of death.[6] In the case of sepsis infection, the mortality rate may be as high as 40%, and about 20% of survivors may suffer from chronic injuries and diseases such as amputations, scars Acute, brain damage, epilepsy and hearing loss.[7] The risk of meningitis is that early symptoms may be similar to flu symptoms such as fever, headache, nausea, vomiting, excessive sensitivity, sore throat or loss of appetite, so they are not quickly detected.[8] Symptoms that determine the progression of meningitis, such as hemorrhagic rashes, neck pain, stiffness, and photophobia, are late.[9] These delayed symptoms, such as confusion, delirium, seizure and loss of consciousness, develop rapidly and can lead to death.[10] Therefore, the effectiveness of the treatment of this deadly disease lies in the speed of movement, and give the necessary antibiotics.[11] Meningococcal meningitis affects young meningitis, especially children under five, and because the bacteria causing the disease are transmitted from person to person by respiratory spray or throat secretions from people who carry them, areas of high population density and overcrowded places such as pilgrimages, gatherings Students or military recruits most likely to transmit the disease.[12,13] As this disease is unpredictable and can affect healthy people in a short time, prevention remains essential, as well as taking vaccines that have been included in the routine vaccine schedule. This study aimed to identify the high risk groups and regions in Iraq.

METHODS

This was a retrospective cross sectional study undertaken in the Statistic department of MOH in Baghdad, Iraq. Ethical approval was taken from the MOH Ethics Committee. Inclusion criteria for suspected meningitis was all the admitted cases during the study period for all ages groups with the history of sudden onset of fever more than 38.5°C rectal or more than 38.0°C axillary and the presence of one or more of the following such as neck stiffness, altered consciousness, meningeal sign. Information regarding vaccination and history of contact with a case of meningitis was obtained. Detailed clinical examination was done. Statistical analysis was done by

using the software package for social studies (SPSS) version 19. The categorical variables were presented as number and percentage. The duration of the study was 1 year.

RESULTS

A total of 2046, the highest percentage of cases 1028/2046 (50.2%) still in the age groups less than 10 years, followed by 568/2046(27.8%) in the age groups 10-19 years old and the less percentage 215/2046(10.5%) in the age groups 20-44 years old. Also, in figure 1 shows the male cases 1199/2046(58.6%) were higher than female cases 847/2046(41.4%). Regard to table 2 shows the type of meningitis. The highest percentage of cases 1021/2046(49.9%) had viral types, followed by 946/2046(46.2%) had bacterial type and 79/2046 (3.8%) had meningococcal type. In table 3 shows the rate of meningitis was higher in Kerbela province 3.08, followed by Wasit province 2.23 and in Baghdad was 1.4 and was less in Al-Anbar 0.01.

Table 1: Distribution of studied sample according to age groups.

Age groups year	Frequency	Percent
Less than 10 years	1028	50.2
10-19 year	568	27.8
20-44 year	215	10.5
More than 45 year	235	11.5
Total	2046	100

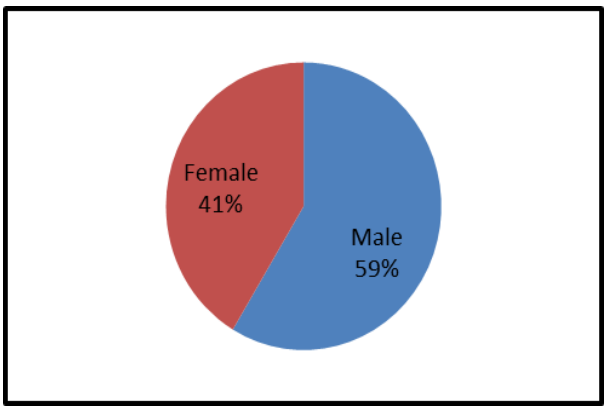

Figure 1: Distribution of studied sample according to gender.

Table 2: Distribution of studied sample according to types of meningitis.

Types	Frequency	Percent
Meningococcal	79	3.9
Viral	1021	49.9
Bacterial	946	46.2
Total	2046	100

Table 3: Distribution of studied sample according to health directorate and rate per 10,000 of the population.

Health directorate	Rate
Baghdad	1.4
Basra	0.01
Nineveh	0.11
Maysan	0
Al-Dewaniya	0.47
Diala	0.51
Al-Anbar	0.01
Babylon	0.64
Kerbela	3.08
Kirkuk	0.41
Wasit	2.23
Thi-Qar	0.09
Almuthanna	0.56
Salah-Aldeen	0.47
Alnajaf	0.06
Erbil	0.05
Duhouk	0.39
AlSulaimaniya	0.90

DISCUSSION

Meningitis is often thought of as a disease that only affects babies and young children. But the truth is that meningitis can affect anyone of any age, with the risk increasing in older adults as our immune systems weaken as we get older.[14] In this study we found the highest percentage of cases (50.2%) still in the age groups less than 10 years, compare with other studied in Africa,[5,6,10] the authors found the highest percentage of disease occur among children less than 5 years. This refers to different the attitude and culture between countries. Also, we found the male cases (58.6%) were higher than female cases (41.4%) and compared with studied in Niger,[13] they found the female cases were higher than male cases. This is because the number of females is higher than that of males as well as a difference in population density between the two countries. The highest percentage of cases (49.9%) had viral types and compared with study in Chad and Niger,[15] the meningococcal disease was higher among them. This type is common between the two countries. The rate of meningitis was higher in Kerbela province 3.08, followed by Wasit province 2.23 and in Baghdad was 1.4 and was less in Al-Anbar 0.01. Compare with other study in Iraq,[2,3] the disease was higher in Baghdad province more than other province, this refer to the deterioration of the health situation. Also, the absence of health control and lack of drugs and vaccines is part of it.

CONCLUSION

The majority of cases were under age less than 10 years; were male, viral disease is common type, the rate of disease was higher among south region in Iraq. Invasive meningococcal disease prevention and control should be guided by monitoring outbreak progression and the emergence and international spread of strains and

antibiotic resistance through use of genomic analyses and implementation of World Health Organization initiatives. Protection of high-risk groups (such as those with complement deficiencies, laboratory workers, migrants and refugees) is recommended.

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