



RATE OF PERTUSSIS AMONG IRAQI POPULATION, A RETROSPECTIVE CROSS SECTIONAL STUDY

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Article Received on 02/01/2020

Article Revised on 23/01/2020

Article Accepted on 13/02/2020

ABSTRACT

Background: Pertussis is a severe respiratory infection characterized by acute coughing attacks accompanied by difficulties in breathing and wheezing in the chest. **Aim:** To identify the rate of disease among population in Iraq. **Method:** A retrospective cross sectional study was carried out at the Life Statistics Center of the Iraqi Ministry of Health within 6 months. During this period, the study samples were 941. Data was entered to Excel sheet and the STATA software program was used to analyze this data and make tables and graphs. **Results:** Our finding 446/941 (47.4) were male and 495/941 (52.6) were female, the highest percentage of pertussis 58.9% occurred in the age group less than 5, followed by 27.6% in the age 5 to 14 years, then 2.4% in the age group more than 45 years old. The higher of incidence rate 2.60 recorded in Muthanna province, 0.92 in Babylon, then 0.83 in Thi-Qar, and the less rate was 0.01 in Al-Anbar, Salah-Al-Deen and Al-Najaf, respectively. **Conclusion:** Most cases with pertussis occurred in the age less than one year; the incidence rate of pertussis was higher in the south of Iraq. Early diagnosis and treatment of pertussis with a macrolide antibiotic, such as azithromycin, before the paroxysmal stage of disease can help mitigate complications and reduce the spread of this highly contagious disease.

KEYWORD: Pertussis, Children, Iraq, Rate, Harm.

INTRODUCTION

Pertussis is a severe respiratory infection characterized by acute coughing attacks accompanied by difficulties in breathing and wheezing in the chest.^[1] Pertussis can be harmful, especially for babies.^[2] Complications may include pneumonia, respiratory failure, seizures, and death.^[3] The main risk factor is the non-vaccination of pertussis.^[4] Exposure to older children and adults with inflammation can also put your child at risk of catching an infection.^[5] Babies can get sick very quickly when exposed to other infected people.^[6] In 2016, pertussis cases for Iraq were 1,014. Though Iraq pertussis cases fluctuated substantially in recent years, it tended to decrease through 1995 - 2016 period ending at 1,014 in 2016.^[7] Then, in 2010, 6286 cases of pertussis were reported in the Region. Of these cases, 73% were reported in Yemen (2534) and Iraq (2034).^[8] In 2008, pertussis or whooping cough caused an estimated 18 903 deaths in countries of the Region. It contributed to about 2% of deaths in children fewer than five years of age.^[9] Also a study in Iraq found out of 133 pertussis cases were studied during an outbreak in Basra from June to December 1996. Most were females and were immunized. There were some severe cases of pertussis among infants caused mainly by B. pertussis and dual Bordetella infection.^[10] Therefore,

over 9,000 cases of pertussis were reported in California during 2010, the most in over 60 years, including 10 infant deaths.^[11] In 2014, 11,209 cases were reported which included two infant deaths and hundreds of hospitalizations.^[12] In 2012, the most recent peak year, CDC reported 48,277 cases of pertussis in the United States, but many more go undiagnosed and unreported.^[13] This is the largest number of cases reported in the United States since 1955 when public health experts reported 62,786 cases.^[14] This aimed to identify the rate of disease among population in Iraq.

METHODS

A retrospective cross sectional study was carried out at the Life Statistics Center of the Iraqi Ministry of Health within 6 months. During this period, the study samples were 941. Data was entered to Excel sheet and the STATA software program was used to analyze this data and make tables and graphs.

RESULTS

Out of 941, 446/941 (47.4) were male and 495/941 (52.6) were female [Table 1]. The highest percentage of pertussis 58.9 % still in the age group less than 5, followed by 27.6% in the age 5 to 14 years, then 2.4% in the age group more than 45 years old [Table 2]. In table

3, shows the higher rate 2.60 recorded in Muthanna province, 0.92 in Babylon, then 0.83 in Thi- Qar, and the less rate was 0.01 in Al-Anbar, Salah-Al- Deen and Al-Najaf, respectively [Table 3].

Table 1: Pertussis disease distributed according to gender.

Gender	Frequency	Percent
Male	446	47.4
Female	495	52.6
Total	941	100

Table 2: Pertussis disease distributed according to age groups.

Age groups	Frequency	Percent
Less than 5	554	58.9
5-14	260	27.6
15-44	104	11.1
More than 45	23	2.4
Total	941	100

Table 3: Pertussis disease distributed according to rate of disease per 100,000 of population.

Health Directorate	Total	Rate
Baghdad	172	0.37
Basra	9	0.03
Nineveh	33	0.09
Maysan	68	0.61
Al-Dewaniya	0	0
Diala	76	0.46
Al-Anbar	1	0.01
Babylon	191	0.92
Kerbela	0	0
Kirkuk	0	0
Wasit	0	0
Thi-Qar	176	0.84
Almuthanna	212	2.60
Salah-Aldeen	2	0.01
Alnajaf	1	0.01

DISCUSSION

Pertussis is uncontrollable, violent coughing which often makes it hard to breathe.^[15] In our study we found 47.4% were male and 52.6% were female. Other study conducted in AL-Diwaniya governorate/Iraq, the authors found 49.6% were male and 50.4% were female.^[16] Therefore, in Babylon province/Iraq, the authors reported 53% were male and 47% were female.^[17] This refers to the same attitudes between provinces. Pertussis can affect people of all ages, but can be very serious, even deadly, for babies less than a year old.^[18] In present study found the highest percentage of pertussis 58.9% still in the age group less than 5, followed by 27.6% in the age 5 to 14 years, then 2.4% in the age group more than 45 years old. In Erbil/ Iraq, the authors found Most of patients were below one year of age (56.9%) with large numbers were not properly vaccinated.^[19] In Babylon province, the authors reported 53% of all cases in the age less than one year's.^[17] This may be because the women

had less education and experiences, how to deal with her child especially when he or she was newborn. Also, the higher rate 2.60 recorded in Muthanna province, 0.92 in Babylon, then 0.83 in Thi- Qar, and the less rate was 0.01 in Al-Anbar, Salah-Al- Deen and Al-Najaf, respectively. Other studied conducted in Canada, the authors reported the incidence rates per 100,000 persons were highest in 2004 (20.5), 2005 (13.6), and 2015 (10.4) for all age groups.^[20] In US, the CDC reported the incidence rate was 52.8% in the age less than one year.^[21] This refers to differ of lifestyle between the countries.

CONCLUSION

Most cases with pertussis occurred in the age less than one year; female cases were more than male cases. The incidence rate of pertussis was higher in the south of Iraq. Early diagnosis and treatment of pertussis with a macrolide antibiotic, such as azithromycin, before the paroxysmal stage of disease can help mitigate complications and reduce the spread of this highly contagious disease.

Competing interests

The authors declare that they have no competing interests.

Financial disclosure statement

No funding.

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