

### Is there an outbreak of neural tube defects happening in Iraq?

To the Editor

I read with interest the paper published by Dr. Zaid R. Al-Ani in an earlier issue of the Saudi Medical Journal entitled "Neural tube defects among neonates delivered in Al-Ramadi Maternity and Children's Hospital, western Iraq."<sup>1</sup> The article describes the details of the occurrence, types, sites, and associated causative factors of neural tube defects (NTD) in Al-Ramadi Maternity and Children Hospital, west of Iraq presenting an overall rate of 33 (per 10,000 births) in that area. A similar findings on the occurrence of congenital heart anomalies has also been reported recently by BBC correspondent, John Simpson, from Fallujah in the same country giving an incidence rate of 95 per 1,000 births.<sup>2</sup> Various rates of NTD prevalence have been reported from different parts of the world ranging from 12.6 (per 10,000 births) in Cuba, 9.59 (per 10,000 births) in Norway, and 4.9 (per 10,000 births) in Hungary.<sup>3</sup> The Tabriz Registry of Congenital Anomalies (TROCA) is a registry of congenital anomalies in Iran located in the city of Tabriz, a major city in the northwest of the country near to the Iraqi border.<sup>4</sup> The TROCA, a member of the international clearinghouse for birth defects surveillance and research, reported a NTD rate of 7.03 (per 10,000) in 2008.<sup>3</sup> According to those figures,<sup>1</sup> it seems that an "outbreak of NTDs" is happening in the Iraqi region of Al-Ramadi. It is 2.6 times higher than that reported from Cuba, 3.4 times higher than that reported from Norway, 6.7 times higher than that reported from Hungary, and 4.7 times higher than that reported from Iran. The very high occurrence of NTDs in this Iraqi region indicates that there is an urgent need for action in the area. The findings are clear enough to show the significance and magnitude of the problem for health authorities for a rapid intervention in Iraq.

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#### Reply from the Author

We thank Dr. Dastgiri for his enquiry, and concern regarding the high NTD incidence result recorded in my Al-Ramadi Maternity and Children's Hospital research

in 2009. As you know, the NTDs may be associated with different causes as the radiation and chemicals of the weapons used in wars, or by failure of folic acid supplementation either through flour fortification or the periconceptional folic acid supplementation as a preventive measure to reduce the incidence of these anomalies. Diwaniah, a governorate in the middle south of Iraq, reported more than double our incidence rate (8.4/1000) of NTDs. The incidence in general is high in Iraq, however, different from area to area depending on the type, and quantity of weapons used. Although the result was high, I do not think we can say it is an outbreak although we use this term for infections not birth defects. However, such a result is alarming and a probable explanation is the more than 25 years passed that have when the country was turning from one war to another, with different unknown weapons used, and with no flour fortification applied in Iraq to date, and even very little sociomedical education regarding the benefit of folic acid for NTD prevention. In Northern Iran, Gotalipour et al<sup>5</sup> recorded an NTD incidence of 28.7/10,000 in 1998-2003. Definitely the results of Norway, Cuba, and Hungary are lower than Iraq and Iran. Both Iraq and Iran were at war for more than 8 years, and we expect a higher NTD incidence rate than those peaceful warless countries. This matter needs urgent intervention from the health authorities, and we welcome any assistance from around the world to solve such a significant risk on the population in Iraq.

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