

## A single center study of epidemiology of neural tube defects

Sir,

The interesting study by Sarmast *et al.*<sup>[1]</sup> has inspired me to shed light on the expanding health problem of neural tube defects (NTDs) in Iraq and compare it with that in India. I would like to address the following three points.

First, Sarmast *et al.*<sup>[1]</sup> mentioned that the incidence of NTDs among their studied population was 0.503/1000 live births. I presume that the actual NTDs incidence was underestimated. This could be attributed to the following three points. (1) The estimated incidence was related only to live births and did not encompass macerated or malformed babies who might have NTDs. (2) The aforementioned incidence was extracted from hospital-based rather than community-based data. (3) In spite of making a significant progress in

increasing institutional births in India, the rate of home delivery is still substantial (37.7%).<sup>[2]</sup> Therefore, a significant number of babies with NTDs born at home in India are expected to increase the reported incidence of NTDs.

Second, Sarmast *et al.*<sup>[1]</sup> did well in comparing their reported NTDs incidence (0.503/1000 live births) with those reported in other studies. The difference in NTDs incidence in Sarmast *et al.*'s study<sup>[1]</sup> compared to other studies is probably related to the interactions of various genetic and environmental risk factors among different populations. Unexpectedly, Sarmast *et al.*<sup>[1]</sup> did not compare their reported NTDs incidence with that recorded in Iraq. Iraq is currently considered among the countries with the highest reported NTDs

incidence in the world with a mean incidence of 24.2/1000 live births.<sup>[3]</sup> The surge in NTDs incidence in Iraq has been attributed to the cumulative effects of exposure to toxicants, including depleted uranium, maternal malnutrition, gestational folate deficiency, absent national program on dietary folate fortification, and marked psychosocial stress secondary to decades of conflicts Iraq has engaged.<sup>[4]</sup>

Third, an alarming call has been recently submitted to the decision-makers in Iraq to consider implementing a nation-wide program to culprit further swinging in the NTDs incidence. This program should comprise various epidemiologic, statistical, diagnostic, therapeutic, and preventive measures tailored by related personnel.<sup>[3]</sup> Though the reported incidence of NTDs (0.503/1000 live births)<sup>[1]</sup> is still within the normal range of 0.5–1/1000 live births reported worldwide,<sup>[5]</sup> I presume that the implementation of that program is still needed in India to prevent a stepwise increase in NTDs incidence.

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**Conflicts of interest**

There are no conflicts of interest.

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