

Pattern of neonatal and postneonatal deaths over a decade (1995-2004) at a Military Hospital in Saudi Arabia

To the editor

I read the interesting article by Majeed-Saidan et al¹ on the pattern of neonatal and postneonatal deaths over a decade (1995-2004) at a Military Hospital in Saudi Arabia. The authors stated that 36% of deaths were due to lethal malformation and they attributed that, in part, to high degree of consanguineous marriage in Riyadh region. I wonder whether the authors undervalued the role of environmental factors in the causation of congenital malformation. Various societal factors such as toxicant exposure, maternal habits, occupational hazards, psychological factors, socioeconomic status, racial disparity, chronic stress, and infection may impact pregnancy outcome. These outcomes include spontaneous abortion, preterm birth, alterations in the development of the fetus, and effects on the long-term health of the offspring.² In comparison with the figure of 36% of lethal malformation reported in the Saudi study, there was 2 folds increase in the prevalence of congenital malformation in Iraqi newborns from 10.2 /1000 total births in the pre-war period 1988-1989³ to 22.5/1000 total births in the post-war period 1996-1997.⁴ The most common congenital malformation was that of central nervous system and the most frequent of that was neural tube defect. A significant association of congenital malformations was revealed with the premature births, male gender, advanced maternal age, previous history of abortion, stillbirths, diabetes mellitus, polyhydramniou, and consanguineous marriage.⁵ Actually, we have no studies determining the true prevalence of consanguineous marriage in Iraq though it is a noticeable phenomenon in our relatively conservative community. In the recent years, the role of environmental factors, in particular the teratogenicity of certain intoxicant, in the surge of congenital anomalies has thrown to light. The United States and British forces used depleted uranium (DU), a waste product of uranium enrichment, in armor-piercing rounds during Gulf war. Inhalation or ingestion of particles containing DU by the nearby Iraqi civilians has resulted in a variety of adverse long-term health effects. An increased risk of birth defects in the offspring of those exposed to DU has been stressed.⁵ This factor with the detrimental

effect of poor nutrition and psycho-social stresses secondary to sanction (1990-2003) and wars 1991 and 2003 most likely prioritize the effect of consanguinity as an explanation for the observational increase in the prevalence of congenital malformation recorded in Iraqi newborns. Finally, the establishment of a regular surveillance for perinatal mortality and construction of a national database system is essential to follow the magnitude of the problem on one hand and help apply preventive interventions whenever necessary on the other hand.

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Reply from the Author

We would like to thank Dr. Al-Mendalawi for his interest in our article and for his important comments.¹ Our study was not designed to look at the causes of congenital malformations in the Saudi population. We think the comparison made by Dr. Al-Mendalawi was not relevant (36% versus 10.2-22.5/ 1000) because they represent different type of population (different denominator). Although we agree with him that certain environmental factors could affect the pregnancy outcome, some of the factors he cited are not well documented as a cause of lethal malformations. Inborn error of metabolism and some of the syndromes shown in table 2 in the paper has clear mode of inheritance. Since most of them are inherited as autosomal recessive, consanguineous marriages, at least, in part has to play a role in the increased incidence of the reported lethal malformation. This has been shown by previous studies.^{7,8} It is worth mentioning, although not reported in our article, that the incidence of these lethal malformations has not changed over the study period.

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Statistics

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