The effects of topical iodine containing antiseptics on thyroidal status of preterm versus term babies

To the Editor

I would like to comment on the interesting study by Hudaoglu et al on the effects of topical iodine containing antiseptics on the thyroidal status of preterm versus term babies.

First, the use of iodinated skin disinfectants in the perinatal period can result in a significant iodine overload of preterm and transient hypothyroxinemia. Hudaoglu et al addressed in their study that povidone-iodine (PI) might cause transient hypothyroxinemia in preterm babies (>30 weeks gestational age, >1.5 kg) and that might be the reason for behavioral problems observed later in these children. This conclusion should be considered with caution for 2 reasons: 1. It is difficult to solely attribute behavioral disturbances later in life in the studied preterms to transient hypothyroxinemia secondary to antecedent exposure to PI antiseptic as genetic, periconceptional events, nutritional, and infectious insults are among the well-known etiologic agents that might additionally contribute to behavioral disturbances in children. I wonder which reference Hudaoglu et al referred to analyzing the results of thyroid function tests (TFT) in the studied preterm. Currently, the available published references for TFT are designed for American and Spanish preterms. According to my knowledge, no similar published Turkish reference is present. Relying on a non-Turkish reference will definitely cast suspicions on interpretation of the estimated TFT in the studied preterms and, hence, might alter the precision of the presented conclusion.

Second, PI, which is a combination of molecular iodine and polyvinylpyrrolidone, has been used for a long time in hand disinfection, skin preparation, and as an antiseptic irrigant. It has a broad-spectrum antimicrobial activity, and its efficacy, particularly in relation to resistant microorganisms such as methicillin-resistant Staphylococcus aureus, is well documented. I presume that Hudaoglu et al sent an indirect message to regard PI as a potentially unsafe antiseptic in preterms and substitute it with a safer alternative because of its correlation with thyroid dysfunction and possibly its aftermath on their behavioral skills later in life. This message might be further augmented by the recent observation that alcohol containing antiseptics tend to have the same antimicrobial activity in comparison with PI and, hence, can be considered as a safe alternative antiseptic in preterms.

Reply from the Author

First, we would like to thank Prof. Al-Mendalawi for his comments on our paper. We would like to point out that as we mentioned in the discussion and conclusion section in our article, the exposure of PI might contribute to behavioral problems. However, it has never been presented as a “solely” responsible factor. As Prof. Al-Mendalawi cited and we emphasized, it might “only” contribute as one of the multiple factors affected these patients and it needs to be confirmed. Recently, Simic et al demonstrated that transiently reduced thyroid hormone in the neonatal period in preterm infants is associated with a reduced neurocognitive outcome in the attention domain at 3 months corrected age. On the other hand, it is a good idea to use references, but it is not essential for thyroid function tests. The most important fact is that preterm infant cord and postnatal thyroid hormone sera levels differ from those of the term infant and adult values; they differ across the range of prematurity (23–36 weeks), changing with gestational age. Moreover, “normal values” for blood parameters of neonates are generally unavailable, because blood is rarely drawn on healthy, normal neonates to establish normal ranges. Additionally, thyroid function test results like adrenal steroids or growth hormone values could have international cut-off values. Therefore, as Prof. Al-Mendalawi has written in his comment only American and Spanish references exist, but the studies of preterm thyroid function are coming from all over the world. It is worth to mention that 2 special topics differ from this general approach: the areas with iodine deficiency and thyroid gland volume measurements. Many studies of Turkish origin on both these topics are available in the literature. Finally, Prof. Al-Mendalawi is correct on the antiseptic properties of iodine. However, in correlation with previous studies the interpretation of our results supported the conclusion that iodine-containing antiseptics have to be used with utmost caution in preterm infants. As nosocomial infections are a serious problem among preterm infants, there is a need for further investigation of new effective local disinfection methods in this group of patients.

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References


ERRATA

In manuscript “Nucleic acid amplification technology for hepatitis B virus, and its role in blood donation screening in blood banks” Saudi Medical Journal 2009; Vol. 30 (11): 1416-1421, the author’s name should have appeared as follows: Mohammad S. Bamaga, Essam I. Azahar, Ahmed K. Al-Ghamdi, Faris Q. Alenzi, Fayssal M. Farahat

In manuscript “Intervention study of needle stick injury in Iran” Saudi Medical Journal 2005; Vol. 26 (8): 1225-1227, the author’s name should have appeared as follows: Sina Mobasherizadeh, Sayed A. Ebneshahidi, Nazafarin A. Mohammadi, Fereshteh Abazari