**Insulin injection: cutaneous adverse effects**

Sir,

We read with great interest the article published in May–June 2015 issue by Tandon *et al*. titled “The Indian recommendations 2.0, for best practice in insulin injection technique 2015.”[1]

Authors have nicely highlighted the correct insulin injection techniques and its importance. Proper insulin administration is equally important as the correct type and dosage of insulin. In routine practice this vital aspect of demonstrating the technique of insulin injection and counseling of the patients is often overlooked. The inappropriately administered insulin not only leads to deranged blood glucose but can lead to many cutaneous adverse effects.

Local dermal reactions at the site of insulin therapy occur at some point of time in about half of all diabetes patients.[2] Apart from the mentioned adverse effects, some other cutaneous adverse effects needs to be highlighted. Acanthosis nigricans localized at the site of insulin injection is one of the commonly observed adverse effect over sites such as abdomen and arms.[3] Acanthosis nigricans co-localizing with amyloidosis have also been reported following insulin injections.[4]

Postinflammatory hyperpigmentation is also one of the common cutaneous adverse effects following insulin injections, which can have at times a very bizarre presentation. We observed a young female having a whorled pattern postinflammatory hyperpigmentation over abdomen and buttocks, the site of insulin injections [Figure 1a and b]. The patient used to get insulin injections (premixed insulin [human mixtard 30:70]) through her father, reutilizing the needles several times. Multiple use of needles makes the needlepoint blunt. This blunt tipped needle produces more micro-trauma leading to postinflammatory hyperpigmentation. This strange pattern of pigmentation caused a serious cosmetic
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Figure 1: (a) Numerous, discrete well-defined, round, monomorphic, brown to black, macular lesions present in a whorl pattern, over the abdomen. (b) Multiple, brown to black macular lesion over both buttocks

This highlights the importance of patient’s counseling and education regarding proper technique of insulin administration in order to avoid such complications and achieve a normal blood glucose level.

This refers to a recently published research article in your journal regarding the prevalence of thyroid disorders particularly goiter in the general population living in district Pak Pattan, Pakistan. The authors have reported a high prevalence of palpable goiter, nodularity and hyperthyroidism in the study area, a pattern commonly observed in other iodine deficient areas of the world. A novel observation of this study was the association of turmeric intake in diet with reduced risk of goiter development. Thus, authors concluded that instead of using iodized salt, increase turmeric consumption could help to reduce the goiter risk in the study population.

We feel it would have been better if such education is imparted only to goitrous hyperthyroid patients rather than the general population because iodized salt intake might cause aggravation of hyperthyroidism in such patients. The reluctance of physicians on the use of iodized salt is surprising, but it is not for the first time in Pakistan. Already similar views had been expressed about the use of iodized salt in a well-known iodine deficient area of Pakistan.

We disagree with the suggestion of avoiding use iodized salt to eradicate goiter on the basis of evidence provided in literature. The authors might suggest it because of reported iodine-induced complications of thyroid dysfunction (increase in iodine-induced hyperthyroidism, hypothyroidism, thyroid autoimmunity etc.) in the background of iodized salt use.

No doubt, high levels of iodine intake have sometimes been associated with these side effects and have been reported in severe iodine deficient areas at the start of iodized salt prophylaxis. However, global experiences have shown that these complications are transient and subside with the passage of time. Moreover, they depend on the iodine content of iodized salt, underlying thyroid autonomy and genetic susceptibility of the population to the thyroid disorders.

In fact, the real problem in the study area is severe iodine deficiency that is much more than mere goiter development. The readily available solution to this problem is to increase the iodination of salt and periodically monitoring of iodine content of salt. Optimal iodine