



Indian Diabetic Risk Score and its Utility in Steroid Induced Diabetes

Glucocorticoids are known for their hyperglycemic effects and have the most powerful adverse effect on glycemic control among the commonly prescribed drugs. Since use of long-term corticosteroids in medicine is widespread for various indications like rheumatoid arthritis, SLE and bronchial asthma, we tried to identify patients at risk of developing steroid induced diabetes. The Indian Diabetic Risk Score (IDRS), used to predict risk of developing diabetes in general population, has sensitivity of 72.5% and specificity of 61.3%. A cumulative score is calculated based on a numerical score (0-30) assigned to subgroups within each of the four parameters – age, family history, abdominal obesity and physical activity. We applied this scoring system to non-diabetic patients who were started on steroids to assess its validity in predicting the risk of developing diabetes in this subset of patients.

This Study was conducted between June and September 2008 on patients admitted in Department of Medicine, Kasturba Medical College, Manipal.

28 consecutive patients in whom steroids were initiated were included in the study. All patients were non-diabetic with normal FBS, PPBS and HBA1c.

15 patients who developed hyperglycemia in the diabetic range according to ADA criteria were taken as cases and 13 who did not were taken as controls. Patients risk score for developing diabetes was assessed using IDRS.

Mean age was 45.3 years among cases in comparison to 41.3 years among controls while the mean BMI was similar among cases and controls (21.3 kg/m² vs. 22.kg/m²). Two patients in the control group, while none in the cases, had a family history of diabetes mellitus. Mean IDRS was 40 among cases and controls. A score of 60 was taken as cut off in our study to see whether IDRS \geq 60 predicts development of steroid induced diabetes. This was not found to be statistically significant (p value-0.79)

The mechanism of steroid induced diabetes is varied, both hepatic and extrahepatic.² The risk factors for steroid induced diabetes have not been clearly defined. The traditional risk factors for type 2 DM such as age, abdominal obesity, family history and physical activity have been incorporated in the IDRS. In our study we analyzed all patients for the presence of these risk factors. We compared the prevalence of these risk factors in cases and controls and found no significant difference. Consequently, the IDRS scores also did not give any indication of correlation.

Certain facts emerged very clearly in our study. Steroids caused predominantly post-prandial hyperglycemia (as reported by Panthakalam et al.)³ in 89% of the patients while isolated fasting sugar was raised only in 11% . All patients who developed steroid induced diabetes did so in the first week of steroid exposure (100%).

In conclusion, steroid induced diabetes is predominantly postprandial hyperglycaemia, and occurs during the first week of exposure. The IDRS when applied to patients with steroid induced diabetes shows no correlation. The IDRS can thus be a sensitive tool in the exclusion of other types of diabetes except

type 2 DM in the clinical setting.

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