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Diabetes risk diagnosis using obesity markers and glycemic control in Indian population

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Statement of the Problem: It is important to note, liver and pancreas are majorly responsible for normal glucose metabolism, these organs are located centrally hence central obesity/abdominal distension will affect glycaemic control more than generalise obesity. Scientific literature highlights a strong and consistent relation between abdominal girth and diabetes risk. Haemoglobin A1c (HbA1c) is recognized as a diagnostic test for DM as well as for its monitoring. The purpose of this study is to assess association of anthropometric markers viz. Body mass index (BMI) and abdominal girth (AG) for prediction of glycaemic control in Indian population.

Methods & Theoretical Orientation: This single centre observational study was carried out from Feb 2015 to Oct 2015 at Khopoli, Maharashtra. Participants of both gender, >20 yrs and willing to screen for HbA1c and anthropometry were included.

Findings: Out of the 2640 participants who visited the centre, 1870 (N=860 non-DM, age-median (range): 57 (48/65) and N=1010 DM, age: 60 (53/65)) were enrolled in this study. HbA1c levels were statistically significantly elevated in DM vs. non-DM group (median (range): 7.5 (6.5/8.9) vs. 5.7 (5.2/6.3); p=0.000). Interestingly, abdominal girth showed significant difference between DM and non-DM groups (median (range): 95 (88/102) vs. 93 (86/100); p=0.022). Whereas BMI did not differ across the groups (median (range): 25.5 (23.2/28.6) vs. 25.7 (23.1/28.8); p=0.486).

Conclusion & Significance: Among the anthropometric markers namely BMI and AG, AG is a better predictor of DM risk. Therefore, AG should also be considered along with HbA1c for predicting DM risk.

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Page 68