

of 51.17 ± 11.85 years were enrolled from 50 centres throughout India. Mean change of -0.86% was observed in HbA1c from baseline to end of study ($P < 0.0001$). The quality of life assessed by WHOQOL-BREF questionnaire was reported to be "good" (44.5% to 49.8%) or "neither good nor bad" (39.7% to 39.2%) by majority of the participants at baseline and after 3 months of treatment, respectively. A total of 15 AEs and no SAEs occurred during the study. All AEs were of mild intensity and did not require intervention. Overall, saxagliptin addition to ongoing metformin therapy significantly reduced the HbA1c levels and is effective for better glycaemic control with lesser side-effects of hypoglycaemia and weight gain. This combination was generally well-tolerated in Indian T2DM patients, with no new or unexpected safety events identified.

A prospective study on clinical characteristics, beta-cell dysfunction and treatment outcomes in the first identified Indian cohort

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Objectives: Ketosis-prone diabetes (KPD), an atypical form of diabetes, has emerged as a heterogeneous syndrome in multiple ethnic groups. The A-β+ subset of KPD has been alternatively referred to as 'Flatbush Diabetes'. The objectives of this study were to look into the clinical characteristics of adult Asian Indian patients with recently diagnosed, antibody negative diabetes presenting with unprovoked ketoacidosis (A-β+ KPD) and to determine the natural course of recovery of beta-cell functions on serial follow-up over one year. **Materials and Methods:** Newly diagnosed adult diabetes patients (n = 11) with suspected KPD (A-β+) were prospectively studied over a period of 1-year with serial evaluations of clinical, biochemical and beta-cell secretion characteristics. These were compared with a control group (n = 23) of Type 1A diabetes (KPD A+β-) with similar presentation. Beta-cell secretion was assessed by fasting and stimulated 90-minute C-peptide values after a standard mixed meal challenge at baseline and then at 3, 6 and 12 months follow-up. Glycemic control and treatment outcomes were also documented. **Results:** In comparison to the A+β- KPD controls, the A-β+ KPD patients had a significantly older age ($P = 0.001$), higher BMI ($P = 0.01$), stronger family history of type 2 diabetes ($P = 0.02$), more severe ketoacidosis ($P = 0.01$) and higher fasting and stimulated C-peptide level at presentation ($P < 0.01$). On serial follow-up, the patients with KPD achieved complete recovery of their beta-cell function with remission from insulin-dependence within 93 ± 4.5 days without further recurrences of DKA. **Conclusions:** This is the first reported series of Flatbush Diabetes (A-β+ KPD) from India. The phenotype of Indian A-β+ KPD patients differs from their Western counterparts in that they are relatively younger and leaner, though the male preponderance and natural history of recovery of beta-cell dysfunction bears similarity. Does Aβ+ketosis-prone diabetes (flatbush diabetes) exist in India?

Psychological evaluation with diabetes distress scale in Indians with type 2 diabetes

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Objectives: The world's second largest population of diabetics is in India. Psychological issues like depression and diabetes-related distress have not been systematically investigated in Indians with type 2 diabetes (T2D). We sought to evaluate the amount of diabetes-related distress in T2D patients. **Materials and Methods:** We included 364 patients with T2D attending Diabetes OPD. Diabetes Distress Scale was used to assess total diabetes distress and subscales (emotional distress, interpersonal distress, regimen-related distress, physician distress). This scale is well validated and has been used in South Asians in Canada. Initially 2-item screener and then full 17-point DDS questionnaire was administered. **Results:** 135 of 364 T2D patients had a score of 3 or more in initial screener who were then administered the full DDS17. Of the 135 patients included, 53 (39%) were females. The rate of emotional burden and regimen related distress was seen in 81 (60.0%) and 34 (25.2%) patients respectively. 14 (10.4%) patients had physician related distress and 22 (16.3%) patients had interpersonal distress. Overall 50 (37.0%) patients had no distress. On grading, moderate distress was seen in 58 (43.0%) patients and high distress in 27 (20.0%). 31 (37.8%) males and 27 (50.9%) females had moderate distress while high distress was seen in 16 (20.7%) males and 11 (19.7%) females. Emotional burden was seen in 45 (54.8%) males and in 36 (67.9%) females. Regimen related distress was similar in both males and females 19 (23.1%) and 15 (28.3%) respectively. Physician related distress was seen in 7 (8.5%) males and in 7 (13.2%) females. Interpersonal distress was present in 11 (13.4%) males and in 11 (20.7%) females. **Conclusion:** Our data shows that diabetes-related distress is a serious concern for Indians with T2D. Emotional burden and Regimen-related burden were predominant. Females had greater moderate distress and Emotional burden. Studies recruiting a larger sample from diverse regions of India should be conducted for better understanding the psychological issues that may impact diabetes management.

A descriptive study on causes of hypoglycemia, knowledge and awareness of hypoglycemia in a diabetic population admitted to a tertiary care hospital with a hypoglycemic episode

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Introduction: Hypoglycemia had become an important complication globally, especially when meeting current diabetic goals with multiple drugs. Finding out gaps in patient's knowledge about hypoglycemia is important to plan a strategy to prevent this serious complication. **Objectives:** To assess the common causes of hypoglycemia in diabetic patients and to assess knowledge, awareness and practices about hypoglycemia in patients admitted with a hypoglycemic episode. **Methodology:** Patients admitted with documented or severe hypoglycemia to medical wards of a Tertiary care Hospital in Sri Lanka over 6 months period were recruited. Data was collected using an interviewer based questionnaire. **Results:** 60 patients were admitted with hypoglycemia during the study period. 57% were Males. 85% were older than 50 years. 65% had diabetes for >5 years with Macro-vascular (76%) and micro-vascular (92%) complications. 21% had at least one previous attack. 42% were on insulin. Blood glucose level on admission was <50 g/dl in majority (71%). Commonest symptoms of current episode were loss of consciousness (82%), confusion (18%) while most had associated other symptoms such as sweating (43%) and oral numbness (5%). 77% were previously educated thoroughly on hypoglycemia. some patients correctly identified altered consciousness (70%), confusion (40%), sweating (61%) and palpitations (22%) as symptoms of hypoglycemia. 88% knew how to manage a minor hypoglycemic episode. The common causes for hypoglycemia were missing a meal while on insulin (75%), renal impairment (20%), and alteration of drugs (5%). only 32% owned a glucometer. **Conclusions:** Patients on insulin as well as oral drugs, should be educated on common hypoglycemic symptoms to enable early identification and treatment to prevent neuroglycopenia. Importance of taking regular meals should be emphasized.

Autoimmunity and endocrine dysfunction in type 1 dm

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Background: Type 1 diabetes is divided into antibody positive 1a diabetes and antibody negative 1b diabetes. As per literature, majority of the Indian type 1 diabetic patients are 1b, as compared to the western population. The Commonest autoimmune disorders associated with Type 1DM are Autoimmune thyroid disease and celiac disease. **Aims and Objectives:** (1) To study the autoimmune antibody profile of type 1 diabetic patients. (2) To study the prevalence of other autoimmune disorders in type 1 diabetics. **Materials and Methods:** All the patients with the clinical diagnosis of Type 1 diabetes who attended the OPD or got admitted in the wards of Pushpagiri Medical College, Kerala were included in the study. A total of 120 patients were studied. The period of the study was from January 2014 to July 2017. All patients underwent screening for auto antibodies- GAD 65 and IA2 as well as thyroid dysfunction and thyroid auto antibodies, (TSH and Anti TPO antibodies), and Anti TTG antibody estimation was done in all patients to screen for celiac disease. In clinically indicated patients, a ACTH stimulated cortisol levels, FSH, LH and testosterone or estrogen levels were done to diagnose other autoimmune endocrine disorders. **Results:** Majority of the patients were antibody positive Type 1 A diabetes 71.6% (86/120), out of which GAD positivity was seen in 81.3% of the positive cases (70/86) IA2 was positive in 45.3% cases (39/86). Both were positive in 31.3% (27/86). The

average age of presentation was 12.2 ± 2.8 years. On screening for other autoimmune disorders associated, Anti TPO Positivity was found in 45/120 (37.5%), Elevated S.TSH in 14/120 (11.6%), Anti TTG positivity in 2/120 (1.6%) and 1 patient (1%) had primary ovarian failure. No patients had clinical features or investigations suggestive of adrenal failure. **Conclusions:** Our study population is predominantly autoantibodies positive (1A), which is similar to the Caucasian population. This is contrary to what literature states, that majority of the Indian type 1 diabetic patients are antibody negative (1b), as compared to the western population. Early screening for autoantibodies in work up of Type 1DM can aid in its diagnosis as well as associated disorders and predict future risk of development of other autoimmune disorders. Thyroid disease still remains the most common autoimmune disorder in Type 1 DM. The incidence of celiac disease in the population studied is lesser than what is described in literature.

Correlation between acanthosis nigricans neck severity scoring with insulin resistance and parameters of metabolic syndrome

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Introduction: Acanthosis nigricans, the velvety pigmentation of neck, axilla, knuckles and other surfaces is seen in obesity, diabetes, malignancies, drugs, pineal tumors, and other endocrine disorders. It is considered a cutaneous marker of tissue insulin resistance. **Aims and Objectives:** To determine the prevalence of acanthosis nigricans in type 2 diabetes mellitus and its correlation of acanthosis neck grading with various anthropometric measurements BMI, waist circumference, waist hip ratio and insulin resistance by HOMA-IR and other metabolic parameters. **Materials and Methods:** One hundred consecutive subjects (50 males and 50 females) with newly diagnosed type 2 DM, attending the endocrinology/medicine OPD of Pushpagiri medical college were studied. Acanthosis was graded based on standard scale of 0-4 (0: Not visible, grade 1 Present: clearly present on close visual inspection, not visible to the casual observer, extent not measurable. grade 2, Mild: limited to the base of the skull, does not extend to the lateral margin of the neck, grade 3: extending to the lateral margins, not visible from the front, and grade 4: extending anteriorly). Anthropometric data were obtained and insulin resistance calculated as HOMA-IR from fasting insulin and fasting blood sugar values. Other parameters of metabolic syndrome and obesity- HDL, Triglycerides, Uric acid levels were estimated. **Results:** The average age of the study population was 42.5 years, with male to female ratio of 0.81 The prevalence of acanthosis in males was 53.2% and in females was 76.6%. The acanthosis neck severity grading had a statistically significant correlation with fasting glucose levels, fasting insulin levels, and insulin resistance values calculated by HOMA-IR ($P < 0.05$). Acanthosis severity scoring had statistically significant correlation with triglyceride values, and uric acid levels. The correlation showed a trend towards significance with waist circumference, but not with BMI. **Conclusion:** Acanthosis nigricans neck severity grading correlates