



MICRO LABS LIMITED

Diabetes Update

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Dear Doctor,

Greetings from Micro Labs Limited. We are happy to bring you **"DIABETES UPDATE"** which contains latest and interesting news in the field of Diabetes and Endocrinology.

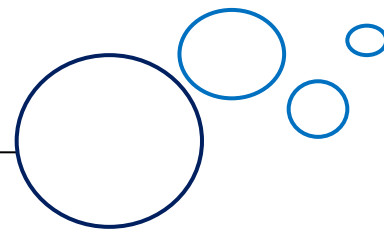
- Obesity and Incident Diabetic Neuropathy in Participants with Type 2 Diabetes Mellitus
- Psychological Care in Children and Adolescents With Type 1 Diabetes in a Real-World Setting
- Relationship between age of onset of Type 2 Diabetes with Long-term Risk of End Stage Kidney Disease

Should you require any specific article or medical information, please feel free to contact us at medicalservices@microlabs.in

Looking forward to your valuable feedback

Best Regards,
Medical Team, Micro Labs Limited





Obesity and Incident Diabetic Neuropathy in Participants with Type 2 Diabetes Mellitus

The incidence and prevalence of diabetes mellitus have been increasing worldwide as a consequence of the obesity epidemic. Approximately 30% of people with diabetes suffer from neuropathy, and up to 50% eventually develop diabetic neuropathy (DN).

DN is one of the most common and severe microvascular complications of diabetes, accounting for more hospitalizations than all other diabetic complications combined and is responsible for 50% to 75% of nontraumatic amputations. Moreover, DN can result in increases in the risk of chronic pain, foot ulcerations, and all-cause mortality, imposing a great economic burden due to diabetes care.

Previous epidemiological evidence on the sex-specific association of obesity, particularly abdominal

obesity, as reflected by larger waist circumference (WC), with incident diabetic neuropathy (DN) remains limited. In this context, this study explored the prospective associations between incident DN and WC and BMI using data from the Action to Control Cardiovascular Risk in Diabetes (ACCORD) study. The ACCORD study was a randomized, multicenter, double 2 x 2 factorial trial in 10,251 patients with T2DM. The present study provides a unique sample of diabetic participants, with extensive baseline measurements and almost complete follow-up for morbidity.

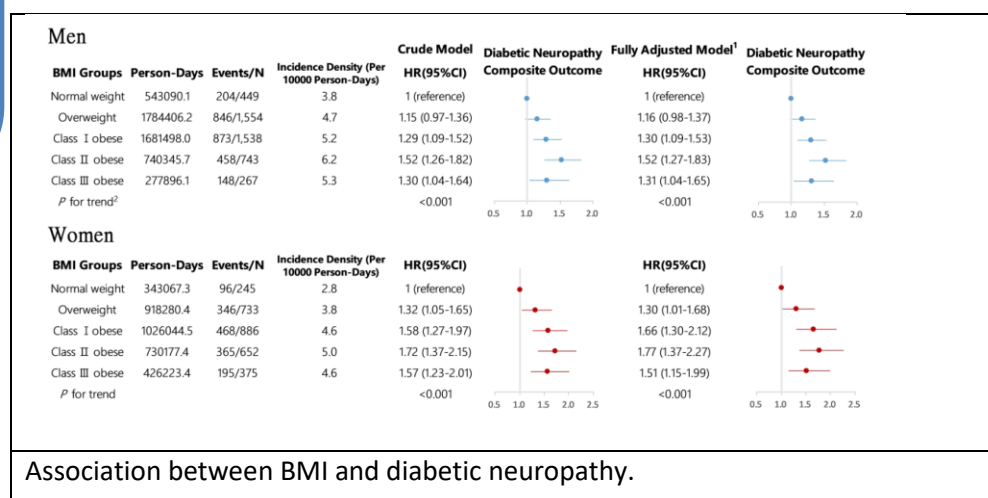
Zhou et al. used data from a patient cohort with a median 10-year history of type 2 diabetes mellitus at the time of recruitment. A composite outcome of four types of predefined DN (Neuro 1-4) was used as the outcome of interest. Because of sex differences in abdominal obesity, analyses were

General and abdominal obesity were both associated with an increased risk of incident DN among individuals with type 2 diabetes mellitus, regardless of gender.

conducted separately for men and women.

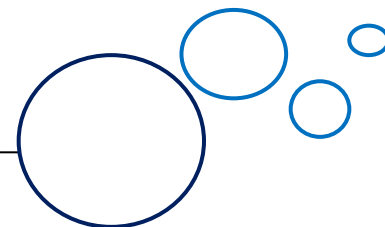
Among the 7442 participants (4551 men and 2891 women) recruited in the Action to Control Cardiovascular Risk in Diabetes (ACCORD) study, 3999 cases of incident DN were documented (1413 in men and 853 in women). Larger WCs were associated with a higher risk of DN among both men and women. Compared with the lowest quintile, the HR for the

highest quintile was 1.30 (95% CI 1.13-1.49) among men (P -trend <0.001). For women, the HR for the lowest vs highest quintile was 1.25 (95% CI 1.04-1.51) (P-trend <0.001). A linear relationship between WC and DN was observed in men, and in women, the risk of DN increased as the WC quintile increased before it appeared to plateau. The relationship between BMI and incident DN was similar to the results observed for WC.



The present study found that abdominal obesity, defined by waist circumference, was associated with an increased risk of incident diabetic neuropathy in patients with type 2 diabetes

mellitus, for both men and women. These findings extend the knowledge on the sex-specific association between abdominal obesity and diabetic neuropathy among diabetic patients, which



highlights the need for further studies to elucidate the mechanism underlying sex differences in the association between waist

circumference and the risk of diabetic neuropathy.

Source: Zhou R et al. J Diabetes 2020 June.

<https://doi.org/10.1111/1753-0407.13075>

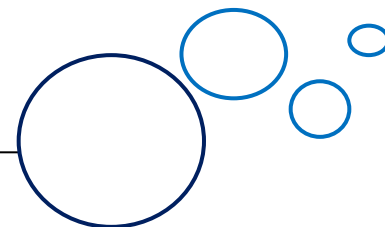
Psychological Care in Children and Adolescents With Type 1 Diabetes in a Real-World Setting

Children and adolescents with type 1 diabetes appear to have more psychological distress and a higher risk of emotional problems and psychiatric disorders compared to children and adolescents without diabetes. In particular, prevalence rates of depression, anxiety and eating disorders are elevated in youth with type 1 diabetes. Psychosocial problems and psychiatric disorders can interfere with treatment performance and adherence in type 1 diabetes and are often associated with poor glycaemic control and an increased rate of diabetic ketoacidosis (DKA). More diabetes-related hospital admissions are reported in children and adolescents with psychosocial problems or psychiatric disorders. Therefore,

international consensus guidelines recommend easy accessibility of psychosocial care for children and adolescents with type 1 diabetes and their families.

The study was conducted to assess psychological care in children and adolescents with type 1 diabetes in a real-world-setting and to evaluate associations with metabolic outcome. Delivery of psychological care, HbA1c, and rates of severe hypoglycaemia and diabetic ketoacidosis (DKA) in children and adolescents with type 1 diabetes from 199 diabetes-care-centres participating in the German diabetes survey DPV were analyzed.

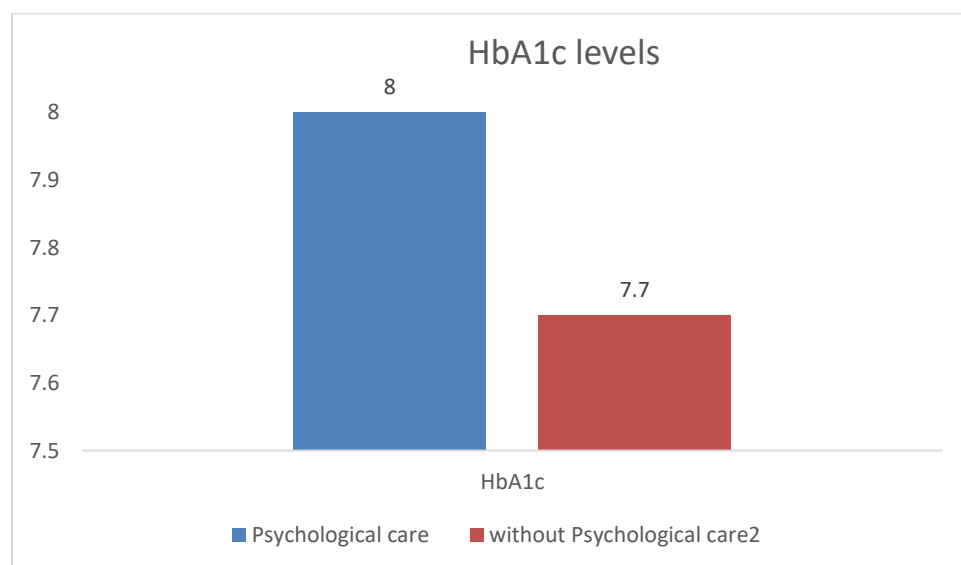
Overall, 12,326 out of 31,861 children with type 1 diabetes were



supported by short-term or continued psychological care. Children with psychological care had higher HbA1c (8.0% vs 7.7%, $p = <0.001$) and higher rates of DKA (0.032 vs 0.021 per patient-year, $p = <0.001$) compared to children without psychological care. In age-, sex-, diabetes-duration-, and migratory background-matched children HbA1c stayed stable in

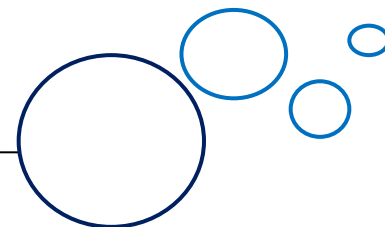
children supported by continued psychological care during follow-up (HbA1c 8.5% one year before psychological care started vs 8.4% after two years, $P = 1.0$), whereas HbA1c was lower but increased significantly by 0.3% in children without psychological care (HbA1c 7.5% vs 7.8% after two years, $P < 0.001$)

Continued psychological care was associated with stable glycaemic control and less frequent severe hypoglycaemias during follow-up.



Additional HbA1c-matching showed that the change in HbA1c during follow-up was not different between the groups but the percentage of children with severe hypoglycaemia decreased from 16.3% to 10.7%

in children receiving continued psychological care compared to children without psychological care (5.5% to 5.8% $P = 0.009$). In this real-world-setting, psychological care was provided to children with higher HbA1c



levels. Continued psychological care was associated with stable glycaemic control and less

frequent severe hypoglycaemias during follow-up.

Source: Galler A et al. *Pediatr Diabetes*. 2020 Jun 7. doi: 10.1111/pedi.13065.

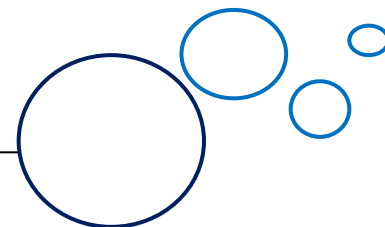
Relationship between age of onset of Type 2 Diabetes with Long-term Risk of End Stage Kidney Disease

One of the most burdensome and costly complications of diabetes is end-stage kidney disease (ESKD). People with diabetes are at considerably increased risk for the development of ESKD and diabetic nephropathy (DN) is now the leading cause of ESKD, accounting for one-third of incident cases worldwide. Despite this significant burden, estimates of the long-term risk of ESKD for those with type 2 diabetes are scarce. The long-term risk of end-stage kidney disease (ESKD) in type 2 diabetes is poorly described, as is the effect that younger age of diabetes onset has on this risk. Therefore, we aimed to estimate the effect of age of onset on the cumulative incidence of ESKD from onset of type 2 diabetes. This study included 1,113,201

people with type 2 diabetes registered on the Australian National Diabetes Services Scheme (NDSS) followed from 2002 until 2013. The NDSS was linked to the Australia and New Zealand Dialysis and Transplant Registry and the Australian National Death Index.

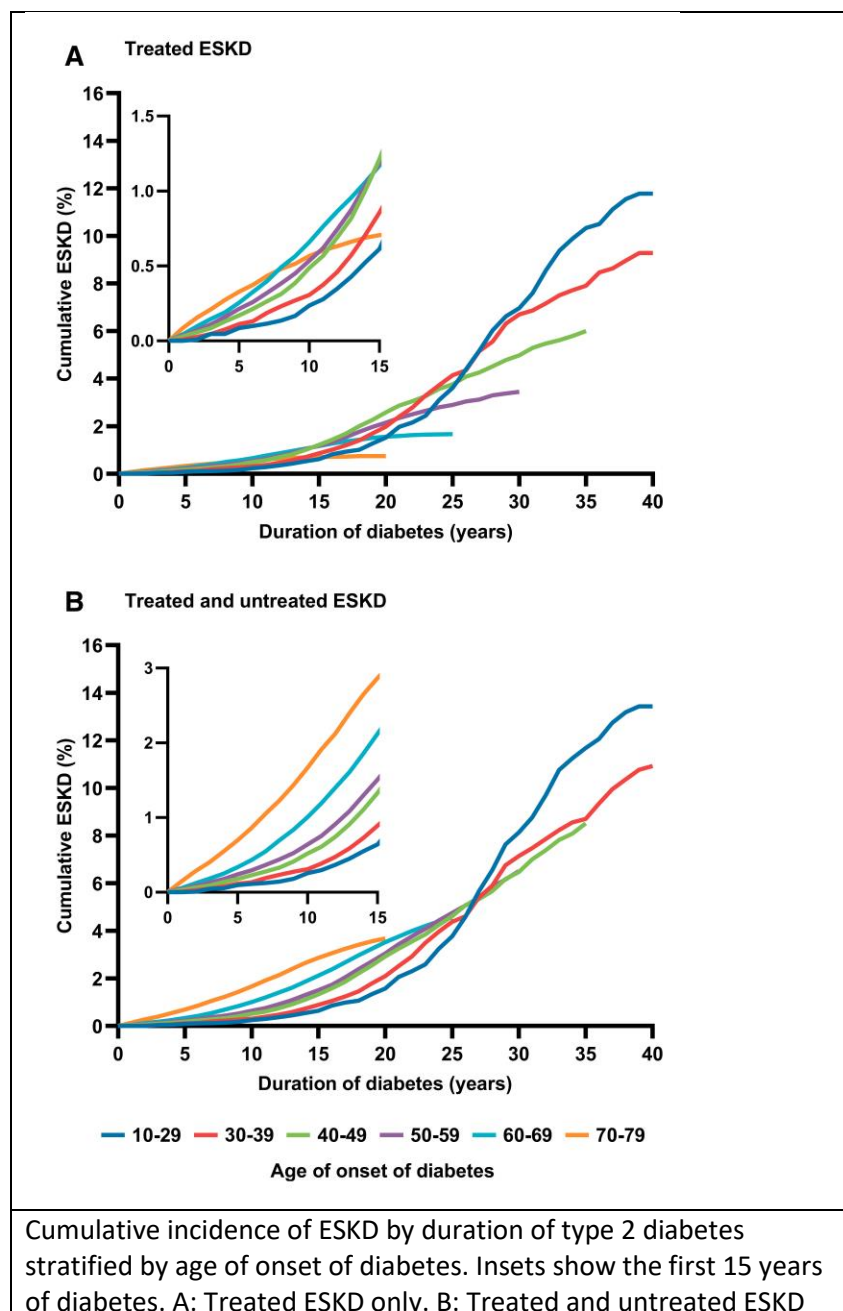
Between 2002 and 2013, there were 7,592 incident cases of ESKD during 7,839,075 person-years of follow up. In the first 10-15 years following onset of diabetes, the incidence of ESKD was highest in those with an older age of onset of diabetes, whereas over longer durations of diabetes the incidence of ESKD became higher in those with younger-onset diabetes. After 40 years of diabetes, the cumulative incidence of ESKD was 11.8% and 9.3% in those

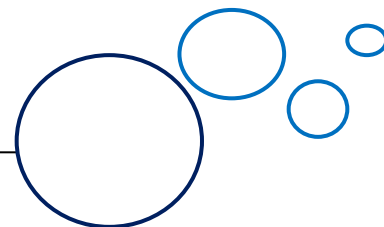
The long-term risk of ESKD in type 2 diabetes is high, which disproportionately affects those with younger-onset of diabetes as they are more likely to survive to longer diabetes durations



diagnosed with diabetes aged 10-29 and 30-39 years, respectively. When death from ESKD without renal replacement therapy was included, incidence of ESKD

remained higher in older onset diabetes for the initial 20 years, with no clear effect of age thereafter.





In conclusion, this large, population based nationwide linkage study indicates that the long-term risk of ESKD in type 2 diabetes is high, which disproportionately affects those with younger-onset type 2 diabetes because they are more likely to survive to longer diabetes durations. Our data did not, however, clearly support the hypothesis that younger-onset type 2 diabetes increases the risk of ESKD beyond its effects mediated by attainment of longer diabetes durations. This study supports the

notion that delaying the onset of type 2 diabetes would be an effective method for reducing the risk of ESKD and also adds to the body of evidence highlighting the urgent requirement for development and implementation of effective interventions that attenuate the progression of DN in type 2 diabetes.

Source: Morton JI et al. Diabetes Care. 2020 June. doi.org/10.2337/figshare.1227311 0.v1



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