



Prevalence of gastrointestinal diseases in the newly diagnosed pre-diabetic and diabetic patients

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Objectives

- Delayed gastric emptying affects a substantial proportion of patients with long-standing diabetes, and when associated with symptoms and/or disordered glycemic control, affects quality of life adversely.
- On the other hand changes in gastric incretin hormones also play an important role in the pathophysiology of diabetes.
- In our study, we aimed to investigate the incidence of gastrointestinal disease in patients with newly diagnosed diabetes and pre-diabetes.

Methods

- A total of 73 patients with new diagnosed pre-diabetes and diabetes were included in the study. Patients demographic data, biochemical parameters and glycemic control data were recorded.
- Patients were examined in detail, gastrointestinal disorders (peptic ulcer, gastritis, gastro esophageal reflux, functional dyspepsia, functional bowel disease, organic bowel disease) and gastrointestinal medications were recorded.
- Furthermore, during admission, a questionnaire for gastrointestinal disease; gastrointestinal symptoms rating scale (GSRS) was performed. Data were compared in patients with pre-diabetes and diabetes.

Results

- Mean age of diabetic patients (n = 39) was 47.6 ± 8.7 while 39.8 ± 14.6 of pre-diabetic patients (n=34) ($p = 0.009$), and mean HbA1c levels were found 7.8 ± 1.9 in patients with diabetes, 5.8 ± 0.4 in patients with pre-diabetes ($p < 0.001$).
- Fasting blood glucose (FBG), postprandial blood glucose (PBG) and creatinin levels were higher in patients with diabetes compared to pre-diabetes (FBG 156.7 & 99.4, PBG 230.7 & 143.2, creatinin 0.8 & 0.6). The average total GSRS scores were 5.95 ± 3.9 and 4.59 ± 4.2 in patients with diabetes and pre-diabetes respectively ($p=0.09$).

	Diabetes (n=39)	Prediabetes (n=34)	p
Age (years)	47.6 ± 8.7	39.8 ± 14.6	0.009
FBG (mg/dl)	156.7 ± 67.5	99.4 ± 11.6	<0.001
PBG (mg/dl)	230.7 ± 80.8	143.2 ± 32.3	<0.001
Chol (mg/dl)	211.3 ± 41.0	212.5 ± 55.5	0.76
HDL (mg/dl)	47.1 ± 11.4	55.4 ± 15.1	0.05
Tryg (mg/dl)	198.6 ± 127.7	195.2 ± 115.1	0.98
Creatinin (mg/dl)	0.8 ± 0.4	0.6 ± 0.1	0.002
Uric acid (mg/dl)	4.9 ± 1.9	4.9 ± 1.2	0.66
HbA1c %	7.8 ± 1.9	5.8 ± 0.4	<0.001
HOMA1r	7.9 ± 8.2	6.3 ± 4.5	1.00
BMI (kg/m ²)	33.6 ± 7.9	34.8 ± 7.0	0.28
GSRS	5.95 ± 3.9	4.59 ± 4.2	0.09

	Diab (n=39)	Prediab (n=34)	p
GID %*	38.5	11.8	0.009
GIDuse %	20.5	5.9	0.060

* Correlation coefficient 0.303 (p=0.009)

- The frequency of gastrointestinal diseases were 38.5% in diabetic patients and 11.8% in the pre-diabetics ($p=0.009$). Gastrointestinal drug use (GIDuse) were observed in 20.5% of diabetics and 5.9% of pre-diabetics ($p=0.060$).
- No correlation was detected with the presence of gastro-intestinal disease between age, biochemical parameters, HbA1c level or BMI.

Conclusions

In patients with long standing diabetes, gastroparesis, is a known complication. However, in our study, presence of gastrointestinal diseases was significantly higher in patients with newly diagnosed diabetes when compared with pre-diabetic patients. When also considering incretin hormone effect, contributing of gastrointestinal diseases to the development of diabetes maybe become obvious.

