

REMOTE MONITORING OF DIET FOR PATIENTS WITH GESTATIONAL DIABETES USING A SPECIALIZED MOBILE APP DIARY

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Remote monitoring System for People with gestational Diabetes

Materials and Methods

Patients with diagnosed gestational diabetes were given an application, developed for mobile devices and desktop computers, which they used to keep track on:

- ❖ food intakes,
- ❖ blood glucose (BG),
- ❖ physical activity,
- ❖ sleep,
- ❖ ketones.



APP

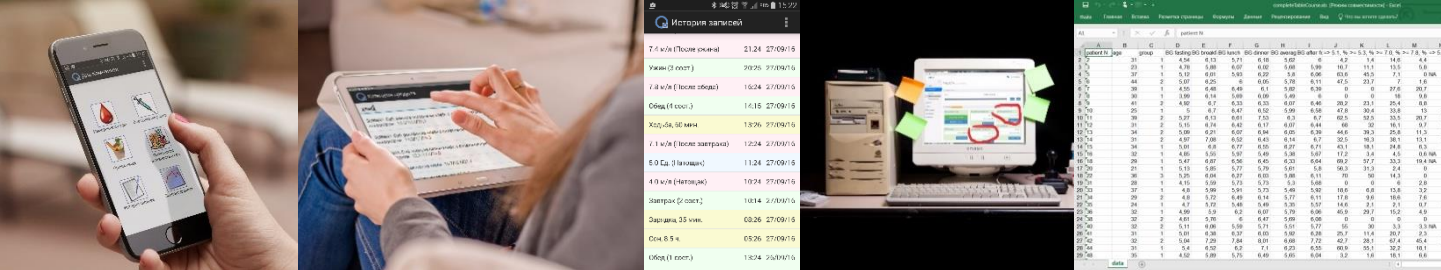


Group:
Women with diagnosed gestational diabetes

How works:
physicians receive reports on patients' diet and glucose monitoring plan;

physicians provide patients with a remote feedback.

The records collected onto a standardized spreadsheet were sent via E-mail and stored remotely for further analysis.



Results

By November 2016:

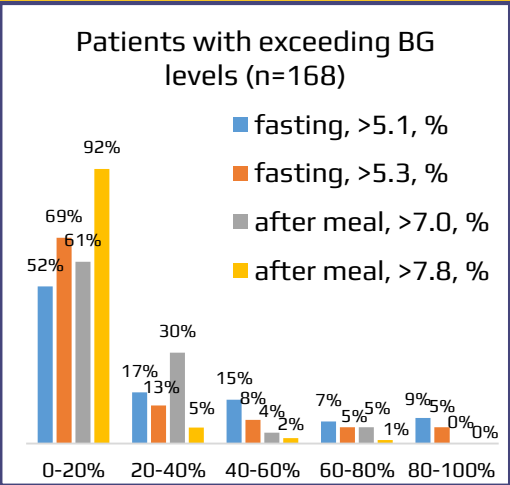
168 patients:

- ✓ age: 21-44 years;
- ✓ fasting BG: 2.8-6.7 mmol/L;
- ✓ weight: 45-119 kg;
- ✓ BMI: 16.5-42.0;
- ✓ HbA1C: 4.1-7.9 mmol/L;
- ✓ Ketons: 0.0-10.0 mmol/L;

- 17820 measurements of BG (in average, 45.4 days per patient)
- 19527 meals (in average, 36.7 days of monitoring by patient)

Carbohydrates consumption:			
breakfast	lunch	dinner	additional food intakes
27.5%	29.5%	26.0%	17.0%

All patients and physicians found the application convenient and helpful (according to a post-study survey). Patients saw the largest drawback in a lack of certain food items in the database. Based on survey results, we are going to increase the size of food database from 2110 to more than 10000 items.



For detailed scientific results see printed poster #101.

1. Pustozarov E.A., Yuldashev Z.M. A Remote Monitoring System for Diabetes Patients. // Biomedical Engineering. July 2014. Volume 48, Issue 2. P. 74-77.
2. Pustozarov E.A., Popova P.V., Tkachuk A.S., Bolotko Y.A., Gerasimov A.S. Implementation of mobile diary app into clinical practice of gestational diabetes treatment. // Problems of endocrinology. 2016. Vol. 62, № 5. P. 32.