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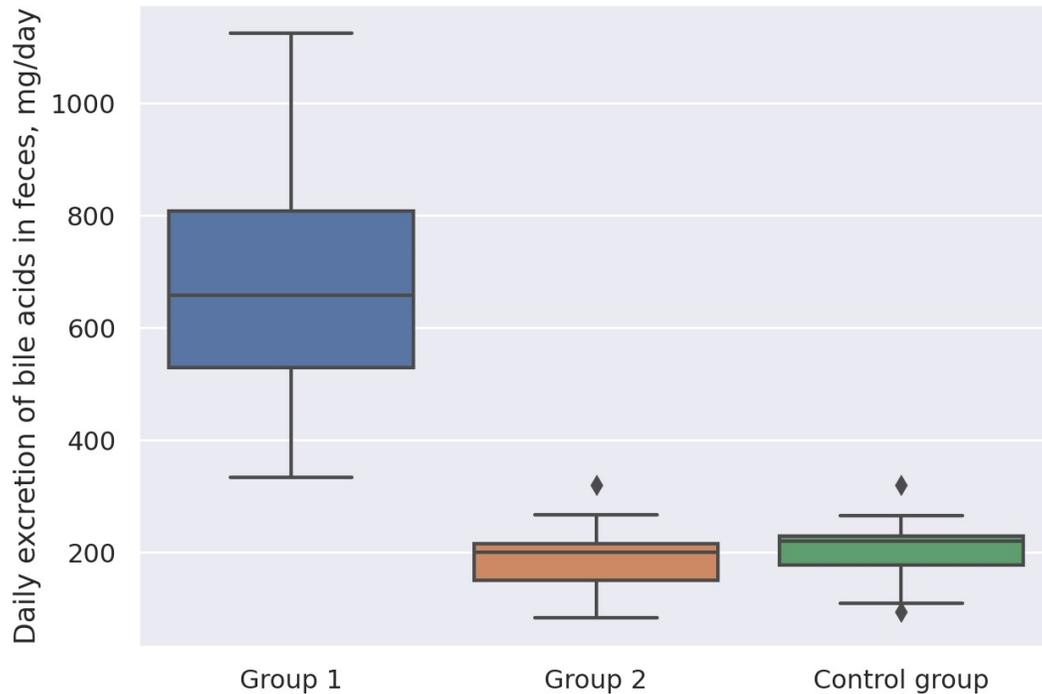
The impact of regulatory molecules of hepato-biliary synthesis of bile acids on developing diarrhoea after cholecystectomy

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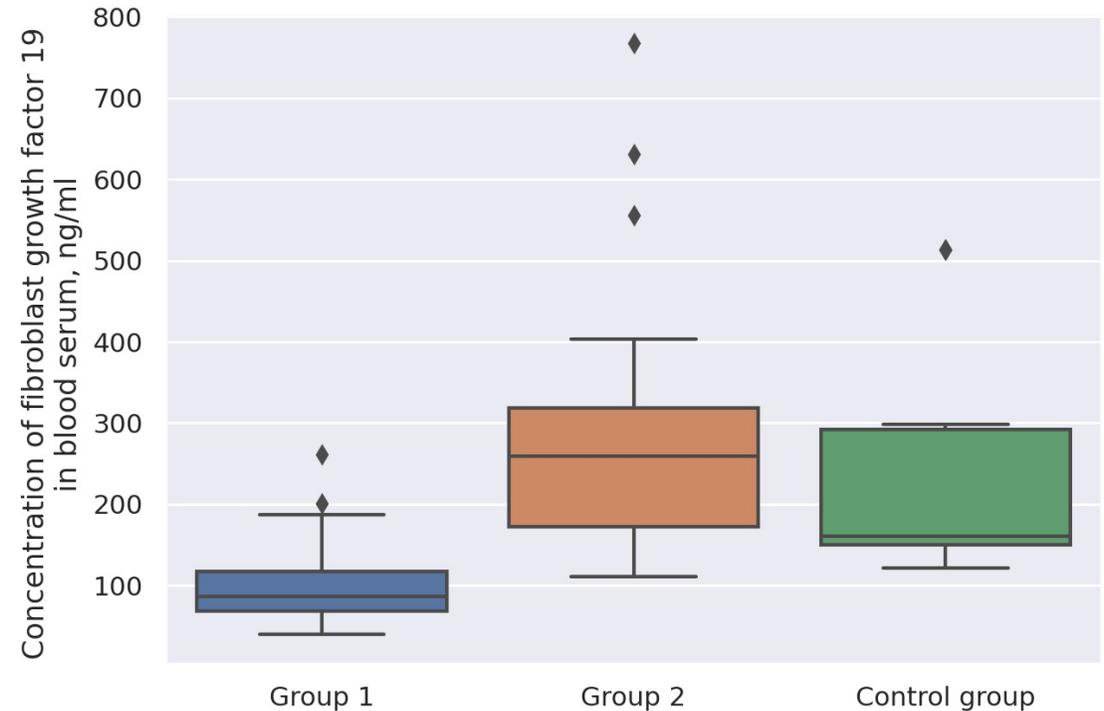
- **Background.** Bile acid malabsorption is one of the frequent reasons for the persistent chronic diarrhoea cases after cholecystectomy (CCY). Its mechanism is very complex, it is not yet fully known and remains under study. Diarrhoea may follow an individual limited ability to reabsorb bile in the distal ileum due to a defect in the link of farnesoid X-receptor (FXR) – fibroblast growth factor 19 (FGF-19).
- **Aim.** The aim of the current study was to determine the role of the fibroblast growth factor-19 (FGF-19) in the blood serum and bile acids (BA) in stools in pathogenesis of bile acid diarrhoea (BAD) of the patients who underwent cholecystectomy (CCY).
- **Methods.** Patients who underwent cholecystectomy were examined at various periods of time, 30 of them with chronic diarrhoea, which appeared after CCY (group 1) and 31 patients with normal stools (group 2). All the patients were studied for FGF-19 concentration in the blood serum and the daily excretion of bile acids in the stools. The control group consisted of 28 practically healthy people.

Research results

Daily bile acids in the stool, second group and control group. ($p < 0.01$ when comparing the first and second groups, $p < 0.01$ when comparing the indicators of the first and control groups)

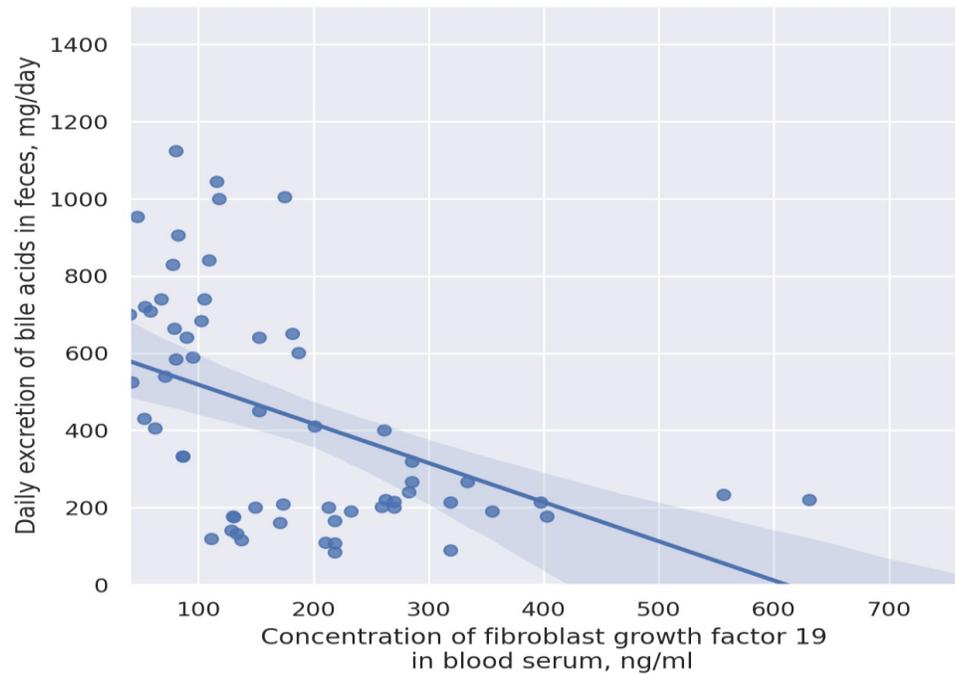


The concentration of fibroblast factor 19 in the blood serum in the first, second and control groups ($p < 0.01$ when comparing the first and second groups, $p < 0.01$ when comparing the indicators of the first and control groups)

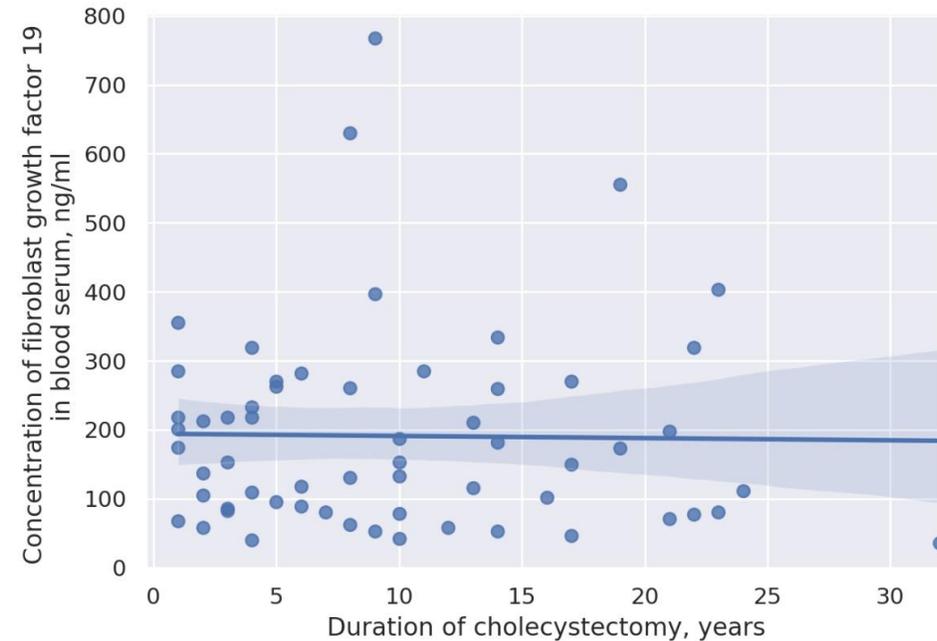


Research results

Correlation relationship between the concentration of FGF-19 in the blood serum and the daily excretion of bile acids in the stool (Kendall's Tau: - 0.355, $p < 0.01$)



Correlation analysis between the concentration of FGF-19 in the blood serum and the prescription of cholecystectomy (Kendall's Tau : - 0.048, $p = 0.595$)



Conclusions

- A comparative study of two groups of patients who underwent cholecystectomy: with and without diarrhea, revealed significant differences
- It was found that patients with PCES with diarrhea have a deficiency in the concentration of FGF-19, which affects the reabsorption of fatty acids in the distal ileum and provokes the development of diarrheal syndrome
- At the same time, the decrease in the concentration of FGF-19 does not depend on the time elapsed after surgery.
- The results obtained indicate the important role of fibroblast growth factor-19 in the development of bile acid diarrhoea ; further study of the role of FGF-19 in the development of diarrhoea after cholecystectomy may be important in predicting the of bile acid diarrhoea.