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SECONDARY PANCREATIC INSUFFICIENCY IN CHILDREN, WAYS OF CORRECTION

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Underground

The pancreas is often involved to pathological processes in diseases of the stomach, duodenum, gall bladder and bile ducts, due to its functional relationship with the digestive system. According to scientific data, secondary pancreatic insufficiency occurs in 41,8-42,2% of children with gastroduodenal and hepatobiliary pathology [1].

Objectives

Searching for ways of correction of secondary pancreatic insufficiency in children with gastroduodenal and hepatobiliary pathology.

Materials and methods

The subject contingent included 20 children aged 7 to 14 years (8 boys and 12 girls) with chronic gastroduodenal and hepatobiliary pathology who had symptoms of secondary pancreatic insufficiency (on the background of functional dyspepsia - 3, chronic superficial gastritis - 5, chronic superficial gastroduodenitis - 3, chronic erosive gastritis - 2, functional disorders of the gall bladder - 5, chronic cholecystitis - 2), and we rehospitalized to the department of older children of the Uzhgorod City Children Clinical Hospital. In 12 (60.0%) of the surveyed children chronic pathology of the digestive tract, in 8 (40.0%) - functional pathology had been diagnosed. Diagnoses were based on clinical, laboratory data and ultrasound examination of the abdomen, according to existing protocols of Ukraine Ministry of Health. The examination included collection of complaints, history of the disease and life, complete blood count and urine analysis, urine diastase level; measurement of bilirubin level and its fractions, ALT, thymoltest, alkaline phosphatase, α -amylase, total protein, creatinine, urea; blood glucose level; esophagogastroduodenoscopy (in case of pain in the epigastric region); ultrasound of the abdomen (liver, gallbladder, pancreas, spleen), determination of α -1 antitrypsin level and C3

fraction of complement in serum apparatus Turbex. All children had been receiving an enzyme preparation (Mikrazym 10000: 1 capsule 3 times a day during meals, for 14 days) as a supplement to the treatment of the primary disease. Mikrazym is an enzyme preparation with active component of minimicrospheric pancreatin containing pancreatic enzymes (lipase, amylase, protease).

Results and discussion

The main complaints of the children were: pain in 20 children (100%): 13 children (65.0%) complained of epigastric pain, 7 (35.0%) children - pain in the right hypochondrium; abdominal distention - in 10 (50.0%) children, regurgitation - in 12 (60.0%) children, changes in stool (alternating constipation with diarrhea) - in 8 (40.0%) children. Results of blood count and urinalysis in all cases were within reference values. In the biochemical blood analysis (bilirubin and its fractions, ALT, thymoltest, alkaline phosphatase, α -amylase, total protein, creatinine, urea), blood glucose level no abnormalities were found. The results of coprogram indicated a lack of gastric digestion and secretory function of the pancreas: digested muscle fibers - + or ++ in 14 children, neutral fat - + or ++ in 18 children, fatty acids - + or ++ in 14 children, starch - + 12 in children, digested fiber - + or ++ in 10 children; mucus, epithelial cells - small amounts, white blood cells - rare in the sample. α -1 antitrypsin refers to acute phase proteins and inhibits most of proteolytic enzymes, its level is commonly increased in chronic pancreatitis. The results showed that in all children serum antitrypsin level was within reference values at an average $1,72 \pm 0,39$ g / l (allowable fluctuation 1,1-2,3 g / l). Normal α -1 antitrypsin level confirms the secondary character of pancreatic insufficiency in the subject contingent of children.

C3 complement fraction had no deviations from the reference values - $1,81 \pm 0,31$ g / l (al-

lowable fluctuation 0,9-2,1 g / l). Ultrasound of the abdomen diagnosed reactive changes of the pancreas in 14 children (70.0%), that included non homogeneous echostructure (in 8 children –40.0%), a slight increase in body size (5 children – 25.0%) and changes characteristic to the primary disease (thickening of gallbladder walls –in 2 children (10.0%), deformation of the gallbladder in 4 children (20.0%).

After the treatment, which included basic treatment of the primary disease (according to current clinical protocols of medical care to children with diseases of the digestive system) and correction of exocrine pancreatic insufficiency (mikrazym 10,000 units) the following results were revealed.

Positive dynamics of the clinical manifestations of the disease was observed (Fig. 1).

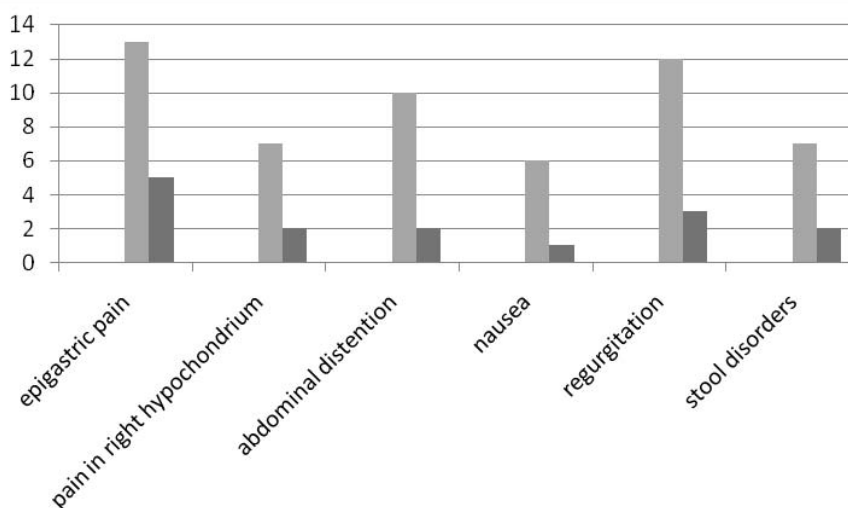


Fig. 1. Dynamics of clinical symptoms of secondary pancreatic insufficiency

Thus, severity of pain decreased: complaints on epigastric pain were registered in 13 children (65.0%) before, in 5 (25.0%) children after the treatment, complaints on pain in the right upper quadrant – in 7 (35.0%) cases before and 2 (10.0%) after the treatment. Severity of dyspeptic syndrome (abdominal distention, nausea, regurgitation) had also decreased, defecation disorders after treatment were recorded only in 2 (10.0%) patients

instead of 7 (35.0%). No side effects or intolerance to mikrazym 10,000 were recorded. Analysis of the coprogram after two-week course treatment of the primary disease and the mikrazym 10,000 therapy points to improvement of secretory function of the pancreas – digested muscle fibers were found only in 5 children (++), neutral fat – in 3 children (+), fatty acids – in 3 children (+) starch – no cases, digested fiber – in 7 children (Fig. 2).

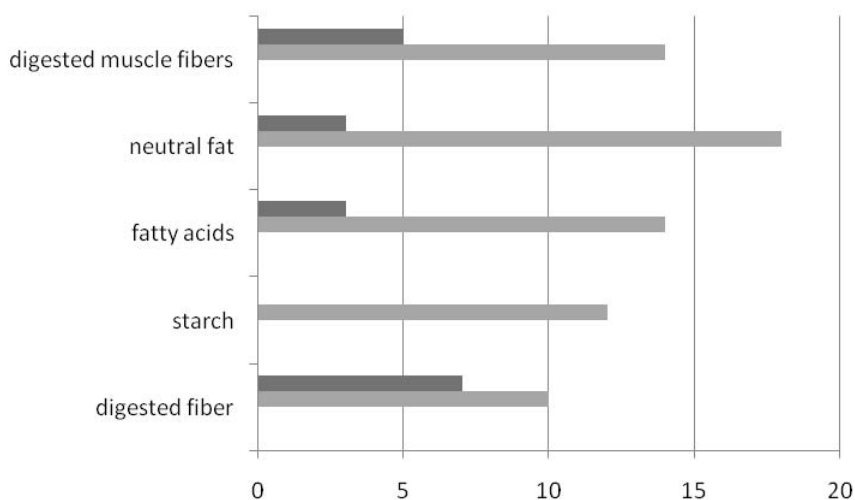


Fig. 2. Stool changes in secondary pancreatic insufficiency



Indicators of α -1 antitrypsin and complement C3 fraction after treatment tended to decrease, but no significant changes were found. Ultrasound of the abdominal cavity, performed after treatment showed no significant changes, except of normalization in pancreas echostructure.

Summary

Objectives. Searching for ways of correction of secondary pancreatic insufficiency in children with gastroduodenal and hepatobiliary pathology.

Materials and methods. The subject contingent included 20 children aged 7 to 14 years (8 boys and 12 girls) with chronic gastroduodenal and hepatobiliary pathology who had symptoms of secondary pancreatic insufficiency

Result. The article presents an analysis of the results of clinical observation of children with secondary pancreatic insufficiency on the basis of digestive tract pathology, who received mikrazym 10000 in addition to the basic treatment. It had been proved that the drug is effective for correction of the secretory function of the pancreas in patients.

Conclusions. On the basis of data obtained it can be seen that mikrazym 10000 is effective and safe for correction of secondary pancreatic insufficiency that occurs in children with functional and organic disorders of the digestive tract. Positive effects include regression of clinical symptoms and reduction of steatorrhea.

Key words: secondary pancreatic insufficiency, children mikrazym.

Вторинна панкреатична недостатність у дітей, шляхи корекції

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Резюме. В статті подано аналіз результатів клінічного спостереження за дітьми з вторинною панкреатичною недостатністю на фоні патології травного тракту, які в доповнення до базового лікування отримували препарат мікразим 10000. Доведено, що препарат є ефективним для корекції секреторної функції підшлункової залози у даного контингенту хворих.

Ключові слова: вторинна панкреатична недостатність, діти, мікразим.

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