

Rehabilitation of patients with chronic pancreatitis by dynamic electroneurostimulation

L. S. Babinets, Y. Y. Kotsaba

Ternopil State Medical University n. a. I. Y. Gorbachevsky, Ukraine

Key words: chronic pancreatitis, dynamic electroneurostimulation, quality of life, clinical course, comprehensive rehabilitation

Introduction

As for the number of appeals to health institutions, diseases of the gastrointestinal tract take second place after cardiovascular diseases (L. M. Petrechuk, I. Y. Skyrda, 2005). Significant social and economic importance of this issue is intensified by a large number of people of working age, disease susceptibility to chronic course with frequent relapses and complications that require surgical treatment (Y. O. Filippov, I. Y. Skyrda, 2005). Pathology of the pancreas takes a special place among diseases of the digestive system (O. V. Synyachenko, N. B. Gubergrits, 2003; P. C. Borman, I. N. Marks, 2003). According to the Center of Medical Statistics of the Ministry of Health of Ukraine, in 2003 the prevalence of pancreatic diseases was 1505.3 per 100,000 of population, 97.2% exceeding the figure in 1997. There was also a trend of increasing incidence of chronic pancreatitis (CP), which growth rate was 70% — 169.8 in 2003 vs. 99.9 in 1997 (Y. O. Filippov, I. Y. Skyrda, 2005).

Twofold increase in the number of patients with acute and chronic pancreatitis has been noted over the last 30 years in the world. Disability in these patients reaches 15% [6].

Using conventional complex treatment of patients with CP, formed in accordance with the latest recommendations of the Ministry of Health of Ukraine, realizes the allopathic approach to treatment "disease — healing factor". Long-term, often lifetime intake of various drugs makes patients turn to alternative therapies. [1]

Based on centuries-old experience of oriental medicine, acupuncture, reflexology and modern research, a new treatment has developed — dynamic

electroneurostimulation (DENS), the spread of which became possible due to the development of portable DENS-devices by a number of independent manufacturers. DENS is a method of non-drug treatment based on influence on active reflex zones and points by dynamic electric current impulses, which form is constantly changing and depends on the electrical resistance of the skin in under-electrode area. This positive effect results not only in eliminating pain, but it also has the impact on the cause of the disease [5]. The basis of DENS-therapy is a current understanding that the body is a complex self-regulating system and, if needed, it can produce necessary biologically active substances to recover. Numerous studies have shown that multilevel reflex and neurochemical reactions, triggering a cascade of regulatory and adaptive mechanisms of the organism, are at the basis of DENS action. Devices for DENS-therapy produce weak electrical impulses, repeating the nerve impulses of human, so that they are perceived by the body as its own signals, restoring broken relationships between systems of body regulation and different organs and tissues [4, 7].

The aim of our study was to investigate the dynamics of clinical manifestations in patients with CP under the influence of complex treatment with the inclusion of DENS-therapy course.

Materials and methods

27 patients with CP, who were treated in hospital and gastroenterological department of the Ternopil City Hospital No 2, were the object of the study. Age of patients ranged from 18 to 69. Among them there were 13 women and 14 men. Verification of diagnosis was performed in accordance with the working classification of CP proposed by Y. C. Tsimmerman with additions by N. B. Gubergrits [2]. Patients were divided into two groups: the first one (15 persons) received conventional treatment regimen. It included the use of digestive motility regulators — antispasmodics (0.04 g drotaverine 2 tab. 2 times a day) and/or prokinetics (0.01 g domperidone 1 tab. 3 times a day), H₂-histamine receptors blockers (famotidine 0.02 g in the evening) and/or proton pump inhibitors (pantoprazole 0.04 g in the morning) and enzymes (25 000 lipase 1 cap. 3 times a

day). The second group (12 people) took DENS-therapy along with a common scheme that included 12-14 sessions according to the proposed scheme. Treatment was performed by DENS-device using built-in therapeutic electrode. We processed the following areas: zone of direct projection of pain (individually for each patient) and direct projection of the pancreas (epigastric area) at a frequency of 77 Hz, zone of segmental rings at 6-8 thoracic segments at a frequency of 60 Hz 3-5 times, closing the circle, lumbosacral area at a frequency of 20 Hz. Influence was held by a labile method in the "therapy" regimen in a comfortable energy range of ED 2 to 5 minutes on each site [3].

Results and discussion

During the clinical examination we observed the following main syndromes in patients: pain, asthenic-neurotic, dyspeptic, anemic, allergic, vitamin deficiencies and steatorrhea (by percentage of presence in the patients examined). After treatment, it was found that the positive trend was observed in both groups (Table 1). But patients who received additional courses of DENS-therapy pain decreased significantly — from 10 (83.3%) to 3 (25.0%), dyspeptic symptoms — from 12 (100.0%) to 3 (25.0%), asthenic-neurotic manifestations — from 11 (91.7%) to 4 (33.3%). Data of the second group after treatment were statistically significant in respect of the first group ($p < 0.05$ for the parameters of pain, dyspeptic and asthenic-neurotic manifestations).

Table 1

Dynamics of clinical syndromes under various treatment regimens

Syndrome	First group (n=15)		Second group (n=15)	
	Before treatment, n (%)	After treatment, (n) %	Before treatment, n (%)	After treatment, (n) %
Pain	12 (80.0)	7 (46.7)*	10 (83.3)	3 (25)**
Asthenic-neurotic	11 (73.3)	7 (46.7)*	11 (91.7)	4 (33.3)**
Dyspeptic	13 (86.7)	6 (40)*	12 (100)	3 (25)**
Anemic	9 (60)	7 (46.7)*	8 (66.7)	5 (41.7)*
Allergic	9 (60)	5 (33.3)*	9 (75)	3 (25)*
Vitamin deficiency	12 (80)	9 (60)*	10 (83.3)	7 (58.3)*
Steatorrhea	10 (66.7)	6 (40)*	9 (75)	4 (33.3)*

* Reliable concerning data in own group before treatment ($p < 0.05$)

** Reliable concerning data in the first group after treatment ($p<0.05$)

Conclusions

Using hardware reflexology course, which includes 12-14 sessions DENS, according to the method of treatment and rehabilitation of patients with CP, proposed by authors, seems appropriate for improving clinical indices (at the average from 82.1% to 35.7% as compared to the first group indices at the average from 72.4% to 42.9%, $p<0.05$). In the further research we consider it appropriate to study the effect of complex treatment programs on the parameters of trophological status and immunological parameters in patients with CP with inclusion of DENS-therapy course.

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Article represents the results of evaluation of the quality of life of patients with chronic pancreatitis after taking comprehensive measures for the treatment and rehabilitation with the inclusion of dynamic electroneurostimulation (DENS-therapy): it is approximately 16% more efficient in estimating the parameters of quality of life by SF-36 and GSRS, and — 8.1% on the average — according to the results of immunograms (T-lymphocytes and B-lymphocytes indices), as compared with patients not having received DENS therapy course. Using the hardware reflexology course of 12–14 DENS sessions pursuant to the authors' methodology is reasonable to improve clinical indices upon chronic pancreatitis from 82% to 36% (46%) at the average versus the corresponding indices in patients from the group of standard treatment — from 72% to 43% (29%) at the average ($p < 0.05$).