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Review Article

Comprehensive Approach to the Patient with Neoplasia of the Duodenal-Biliary-Pancreatic Confluence.

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Abstract

This paper analyzes the various factors involved in the high incidence of duodenal-biliary-pancreatic junction neoplasia. Its overall objective is to provide a study from the perspective of the Science, Technology, and Society approach and to argue the need for an organizational technological innovation project that provides comprehensive management of patients with duodenal-biliary-pancreatic junction neoplasia and the application of Fast-track surgery for the Whipple procedure as a treatment for these patients. The socio-environmental factors that play the most important role in the origin of duodenal-biliary-pancreatic junction neoplasia and that can be modified by the community are described. Finally, the genesis of a comprehensive approach to the management of duodenal-biliary-pancreatic junction neoplasia as a health problem is argued, using the Science, Technology, and Society approach. This can contribute to its solution by achieving an adequate interrelationship between the different levels of medical care. This will provide a novel approach to early patient management.

Keywords: *Neoplasia of the duodenal-biliary-pancreatic junction, Early diagnosis, Science-technology-society.*

Introduction

The term pancreatic carcinoma encompasses all adenocarcinomas of ductal origin or closely related structures (ampulla of Vater), the majority (75%) located in the region of the pancreatic head. Pancreatic cancer (PC) is the most lethal cancer worldwide; only 5% of patients survive more than five years after diagnosis, and 75% do not survive beyond the first year. Every day, more than 1,000 people worldwide are diagnosed with pancreatic cancer. Of these, approximately 985 will die. Symptoms are so nonspecific that between 80% and 85% of patients are diagnosed in advanced stages. At the time of diagnosis, 85% to 90% of patients have inoperable or metastatic disease, a situation reflected in the five-year survival rate (six percent for all stages combined). 1,2,3,4

When the tumor is detected at an early stage and complete surgical ablation is achieved, the five-year survival rate can reach 24%. PC is characterized by its biological aggressiveness, poor oncological prognosis, and late diagnosis. The objective of this review article is to raise awareness among healthcare professionals, especially primary care physicians, about the potential warning signs and symptoms of PC, which is the only way to

achieve an early diagnosis. 1,5,6 Camagüey is among the six provinces with the highest rates of aging, with 14.8% of older adults, which is significant and should draw attention to the search for solutions to the health problems that will arise in the coming years. Mortality among older adults in Cuba has five fundamental causes: neoplasia, among them; diseases of the digestive tract occupy third place, making it necessary to intervene in their prevention and early diagnosis. 7,8

It is therefore necessary to reach out to the community and families, and to identify the social factors that play a decisive role in the high incidence of this disease and that can be modified through promotional and preventive actions. This group of actions humanizes and makes the care of this entity more comprehensive for this group of patients. 1,3,8

The results Cuba has achieved in many of the objectives are indisputable, and reducing the incidence of cancer through early diagnosis is one of them. However, much remains to be done, as the needs and demands of this group of entities are of a higher order, rendering the responses insufficient. This has served as motivation for the implementation of an organizational technological innovation project with which we aim to provide comprehensive management of patients with neoplasia of the duodenal-biliary-pancreatic confluence, improve primary care and hospital care in order to provide a comprehensive approach to the management of this disease and influence the orientation of the population, to modify those factors that can be changed through the management of deep-rooted incorrect habits and customs. 9

The comprehensive management of patients with neoplasia of the duodenal-biliary-pancreatic junction includes promotional and preventive actions for risk factors and causes, targeting vulnerable groups, families, and the community at large. These actions should be implemented by members of the primary care team. It also includes an algorithm for the hospital management of precursor lesions or established cancer, with a social focus that allows for the return of individuals to their work environment. 9,10

With a focus on science, technology, and society, we have been influenced to gain awareness of the enormous scientific and technological challenge facing the developing world in addressing and promoting strategies that seek to offer effective responses to this challenge. 10

In 2006, a new organizational structure called the National Unit for Cancer Control was created within the Ministry of Public Health. Since 2010, it has been named the Independent Section for Cancer Control (SICC), a genuine expression of the government's political will to achieve a population-wide impact in reducing the incidence and mortality from this cause. Its social mission is to reorient the management of the existing program and seek new organizational forms that allow for the coordination of the efforts of society as a whole. 1, 2, 3

The project that gave rise to this research, classified as an organizational innovation 9, establishes a scientific order and rationalization in the management of NIA and provides a solution to a health problem in the province of Camagüey. This problem can be extended to other territories also served here, such as Ciego de Ávila and Las Tunas, by providing our Oncology Hospital with a regional service. It also links Hepatobiliary-pancreatic Surgery, beyond hospital care, with the community, emphasizing the search for vulnerable patients and the socioenvironmental risk factors that influence the behavior of neoplasms at the duodenal-biliary-pancreatic junction.

It is well known that for a decade now, our country has been working toward promoting and consolidating a new scientific and technological culture that meets the demands of today's Cuban socioeconomic reality.10 The specificities of developing our social project require us to update and deepen our social studies on science and technology. Therefore, the objective of this work is to assess, from a social perspective of science and technology, the application of Fast-track surgery in the Whipple procedure in medical services for patients with neoplasia of the duodenal-biliary-pancreatic junction in the early diagnosis of this condition.

General Objective

To assess, from a social perspective of science and technology, the application of Fast-track surgery in the Whipple procedure in medical services for patients with neoplasia of the duodenal-biliary-pancreatic junction in early diagnosis.

Development

Pancreatic cancer has an incidence of 8 to 12 cases per 100,000 inhabitants per year in our country, and is the fourth leading cause of cancer death in men and the fifth in women. Its incidence increases with age; 80% of cases are diagnosed between the sixth and eighth decades of life. It is more common in men and in industrialized countries. In recent years, an increase in pancreatic cancer cases has been detected, mainly due to the aging of the population. It is more common in African Americans, although there is no clear relationship between this fact. The prognosis for this cancer is very poor: the current five-year survival rate is less than 5%. Despite advances in diagnostic techniques, only between 7% and 20% of patients have a resectable tumor at the time of diagnosis; And even in this case (resectable tumor, limited to the pancreatic gland and less than 2 cm in size), the five-year survival rate is between 20% and 40%. 2,3,5

Risk Factors The best-established risk factors are tobacco, a diet low in fruits and vegetables, and exposure to aromatic amines and organochlorine compounds. The development of non-insulin-dependent diabetes without

a family history in patients over 50 years of age is also a recognized risk factor. A meta-analysis described a relative risk of developing pancreatic cancer in diabetics of 2.0%. Patients with chronic pancreatitis, particularly those with alcoholic and idiopathic causes, have an increased risk of developing pancreatic cancer. A multicenter study observed that the cumulative risk 20 years after the diagnosis of chronic pancreatitis is 4%. However, the largest group corresponds to patients with hereditary chronic pancreatitis. In these patients, the estimated cumulative risk of developing pancreatic cancer throughout their life is 60% to 75%, which corresponds to a risk 53 times greater than that of the general population.

Hereditary chronic pancreatitis is an autosomal dominant disease with incomplete penetrance, characterized by a mutation in the gene encoding cationic trypsinogen (PRSS1), located on the long arm of chromosome 14. It typically begins between the ages of 20 and 40, although it may have an indolent course. Several mutations have been identified: R122H, N291, K32R, A16V, D22G. 3, 4, 5

Although Cuba is a country that is making efforts to improve its economic well-being, with social security guarantees and coverage for the entire population, endowed with financial support for public health 9, 10, there are still many actions that can be undertaken to promote accessibility to different services for the study of risk groups and bring them closer to the community to reduce the time between diagnosis and surgical treatment and thus achieve better results; managing to reduce the high morbidity and mortality of this neoplasia in our country and particularly in our province, where in the studies carried out in Camagüey by Pila et al 2 and Pacheco et al 4 a high incidence of neoplasia of the head of the pancreas is observed with high mortality from this entity in our province.

Cultural level, as a socio-environmental factor, is evident in individuals; their social behavior in all spheres of life depends on it. A high level of education is very important, and in this sense, it is also essential to create information campaigns in different settings to raise awareness of the need to modify risk factors and seek medical attention in the event of any eventuality. 9 The high incidence of pancreatic intraepithelial neoplasia is a health problem with multifactorial causes that must be modified from its source, since once it occurs, its biological and social consequences are very negative and difficult to modify. 10

There is little data on the effectiveness of treatments. Analysis of the relationships between science, technology, and society in the case of early diagnosis of pancreatic intraepithelial neoplasia provides an understanding of the comprehensive approach that should characterize its management. Scientific knowledge supported by technology should contribute to modifying the socio-environmental risk factors, which play a fundamental role in the incidence of this pathology. 7, 10

Our efforts must be directed towards preventing the underlying causes, since once this occurs, its impact on health is very negative, with consequences that depend on the severity of the injury and the mutilating nature of the treatments for cancer already established in this area of the body. Controlling it requires preoperative

radiochemotherapy and major surgery, with a high mortality rate and the appearance of postoperative complications such as pancreatic fistulas and gastric emptying disorders, as well as psychological trauma that lead to total disability and a burden on social security for a person of active working age. 1,6,11

To achieve this, existing scientific and technological advances in secondary health care are not enough; attention must be directed toward the community, to assess the individual's social environment and seek out socio-environmental factors that can be transformed and establish screening studies. 2, 9, 10

The human health-disease process is a complex process that integrates systems of biological, psychological, and social processes and their interactions. These processes are part of human activity and guarantee the stability or instability, the existence or death of humans and their systems of relationships. Social processes play a determining role, but do not exhaust or replace psychological or biological processes. 6, 9

Health Promotion is increasingly conceived as the sum of the actions of the population, health services, health authorities, and other social and productive sectors aimed at developing better individual and collective health conditions. Nothing could be more consistent with the current process of recognition and respect for all behaviors that were once classified as inappropriate, but which in the current context have proven we can coexist with without being repudiated by the rest of society. Hence, to achieve this, it is necessary to involve entities such as the CNSEX, which regulates everything related to the engagement of these sectors of society. The goal is to find technological solutions that meet the community's health needs and, therefore, are relevant and appropriate to the social context, while ensuring an increase in the quality and standard of living of society, respect for the environment, and the expected improvement in the population's health status.

The comprehensive management of neoplasia at the duodenal-biliary-pancreatic junction constitutes a systemic and social technology. It involves ongoing exchanges and communications between all sectors, including public health as the guiding force for this activity, culture as the dissemination body, and other social entities responsible for environmental management. This includes state policies that guarantee not only diagnosis but also the fastest possible surgery. Fast-track surgery offers the best options from a social perspective, reducing hospital stays and reducing state costs. 12,13

The system's nature allows for connecting individuals and groups with each other, the agents, materials, and available means for the purposes to be achieved." Comprehensive management of the duodenal-biliary-pancreatic junction requires a health program that prepares the individual and their family to receive appropriate care and protection, and receive diagnosis and treatment as quickly as possible with high quality. This will achieve a better survival rate for patients with ampullary and periampullary tumors in our province. 4,10,14

At the same time, secondary care management must be improved, emphasizing the rational and efficient use of high-tech diagnostic tools in patients at higher risk, with the goal of early detection of the condition and, if

not, addressing the complications of pancreatic intraepithelial neoplasia, which are potentially curable with minimal disability. 2,3,5

The invaluable value of health promotion and prevention actions cannot be underestimated, nor can the quality of medical care be equated with the presence of cutting-edge technology; these are factors that complement each other to improve the quality of care. So-called new technologies are neither the only nor the best reference for achieving a dignified life and a high level of cultural and human dignity. It is contradictory to mention the concept of "new technologies" to refer only to those used when we are already in the presence of cancer. Progress in its treatment through the improvement of imaging and surgical technology is applauded, but it should not be understood as the only alternative. The insistence on a comprehensive approach to the management of a health problem like this is based on the idea that it must be avoided, especially when it comes to understanding and avoiding the main risk factors. We must not forget that science and technology, promoted from a profound humanistic perspective, constitute the fundamental objective of a new society. 4, 8, 10

The question of sovereignty, our development options, and the well-being of our people also depend on our social capacity to produce/disseminate/apply knowledge and connect it to economic, social, and cultural development. This capacity does not depend solely on scientists. Teachers, professors, students, workers, and all citizens are actors and beneficiaries of knowledge. Everyone is part of the social network capable of producing, disseminating, and applying knowledge. 9,10

That is why creating our own diagnostic tools makes us sovereign and gives us the opportunity to act in a timely manner to prevent the emergence of pathologies that, if not identified early, can cause great harm and death. All scientists, health professionals, and the public must heed the warnings that global epidemiology is providing and act accordingly, promoting research that provides us with the necessary tools for greater social well-being. We speak of Social Knowledge Policy to refer to the construction of deliberate strategies aimed at the production, appropriation, dissemination, and application of knowledge, strengthening its institutional foundations, and defining agendas that project objectives and priorities with broad and favorable social impact. 9, 10

Among the areas of research with the greatest impact are medicines, vaccines, diagnostics, medical equipment, biotechnology, educational and medical informatics. However, the creation of comprehensive care programs allows for the interrelation of all these branches with the social and human sciences. In order to address the problem from all angles, the implementation of process studies that encompass a more impactful approach to health service satisfaction is increasingly required.

STS studies and programs have developed since their inception in three major directions: in the fields of research, policy, and education. STS studies in Cuba are undergoing a process of transfer and assimilation of experience internationally, with particularities related to the country's social and intellectual trajectory.

Innovation has distinctive features; it is a social process, multifactorial, interactive, and systemic. Technological innovation in Cuba is a social product resulting from specific economic, political, legal, psychological, moral, cultural, and cognitive factors. 1,8,9,10

The application of science, technology, and society studies to this topic offers us the opportunity to view the problem from a different perspective and to develop the tools to structure technological packages for cancer control. These packages constitute an innovation and become the concrete way to implement biotechnology products from the primary level. This also facilitates technological packages, defined as a set of highly specialized products and services generated from tangible and intangible technologies available in the National Health System. 7, 9, 10

The benefits obtained from this organizational contribution are evident from a social perspective, in the procedures and actions aimed at ensuring early diagnosis, timely treatment, and the construction of values that benefit the health of the general population, patients, and service providers. A continuing education plan for human resources will be developed, aimed at acquiring the necessary skills for identifying vulnerable groups, using diagnostic tools, minimally invasive surgery, providing supportive care, and providing pain relief, among other topics, to improve their competencies for the proper performance of their duties. 10, 11, 12, 13

Economically, this is evident in the efficient, rational, and more scientifically sound use of diagnostic tools. This reduces diagnostic delays without requiring hospital care, thereby reducing bed occupancy and costs. It also reduces the period of inactivity for patients and their companions and their return to work, and ensures that each level of health management has the necessary information to make decisions based on accumulated scientific evidence. 10, 15

In the scientific sphere, a scientifically justified diagnostic algorithm is being introduced as a tool to combat this disease. It is developed by a group of experts, discussed, and validated in each department involved with highly qualified specialists. The training and scientific production of personnel related to the disease is carried out through workshops, refresher courses, and training in the proposed algorithm. The results are published in theses, publications, and scientific events, increasing the quality of life for addressing the phenomenon in question. 1, 2, 9

Finally, and most importantly, the social impact will allow us to achieve early diagnosis and eliminate the possibility of advanced cancer, thus improving the quality of life of the population in accordance with the Party's Guidelines for the country's economic and social policy. 6, 7, 9, 10

Fast-track protocols in pancreatic surgery

Morbidity and mortality in pancreatic surgery, particularly pancreaticoduodenectomy, have decreased dramatically over the past four decades. Mortality in 1970 was greater than 25%; it is currently less than 2%

in high-volume centers. However, morbidity often remains above 40%, despite advances in surgical techniques, anesthesia, and preoperative imaging. In fact, the most specific complications of pancreatic surgery, postoperative pancreatic fistula (POPF) and delayed gastric emptying (DGE), have not improved. 11, 13, 14, 15

Good clinical outcomes can only be achieved by building a system capable of meeting the needs arising from the treatment of these complex diseases. Pancreatic surgery must be performed in referral centers that can guarantee key services, including: ICU, digestive specialists specialized in this pathology, interventional radiologists, medical oncology and radiation therapy, endocrinology, acute and chronic pain units, surgeons expert in pancreatic surgery, and pathologists dedicated to pancreatic surgery using oncopathological criteria for resection margins. To date, the two most widely used classifications are the UICC/AJCC (USA) and the European (RCPath). Ultimately, costs cannot be ignored, as a complicated postoperative period can be extremely costly. Health costs are an effective indicator of the appropriate allocation of resources and the level of logistical organization of an institution. Based on this philosophy, the concept of the "Pancreas Center" emerges, a service or center capable of effectively managing both the diagnosis and postoperative complications in this type of surgery, while maintaining low costs, as shown by the study carried out by Caglevic et al 11.

Pancreaticoduodenectomy is a complex operation with a high risk of postoperative morbidity and mortality, primarily related to the development of postoperative pancreatic fistula. Multiple intraoperative and postoperative treatment strategies exist to mitigate the risk of POPF, many of which have been evaluated in prospective, randomized, controlled trials. In addition to the evidence supporting certain management decisions, there are also compelling data indicating that mortality, survival, and overall life expectancy improve at centers that perform high annual volumes. Within high-volume centers, a strong volume-outcome relationship has been repeatedly demonstrated at the individual surgeon level. Higher volume of this surgery per surgeon is associated with better outcomes; the learning curve for pancreaticoduodenectomy has been described in multiple studies. Therefore, experience (total years in practice, learning curve achievement, annual practice productivity, and total procedure volume over the surgeon's years of experience) influence operative techniques and management decisions for this surgery. 11, 12

Mortality can be up to four times higher in low-volume centers (LVCs), defined as those that perform five or fewer resections annually. Mortality is lower in medium-volume centers (MVCs), defined as those that perform six to nine resections annually, and high-volume centers (HVCs), defined as those that perform twenty or more pancreatic resections annually, with lower morbidity and mortality than in other centers. Two-year survival after surgery is higher in HVCs, which may be influenced by hospital material resources,

postoperative complications, and the accuracy of preoperative diagnosis and staging. Beyond these factors, survival is more closely related to the success of the resection, postoperative follow-up, and possible postoperative treatments. All of this may support the centralization of pancreatic cancer surgery. Therefore, the purpose of our study is to create a multidisciplinary team for the comprehensive management of this disease and thus transform our hospital into a regional pancreatic surgery center, achieving a decrease in mortality by increasing the number of cases received at our center. 11,14

The surgeon's role in performing a safe and effective pancreaticoduodenectomy is a key factor in the success of overall care for patients with this condition. Because of this, there has been significant emphasis on factors that improve the quality of their performance. One of these factors is how to properly train and monitor surgeons performing these operations early in their careers. It has been accepted that there is a learning curve for these surgeons, but little has been published regarding the details of this learning curve, or more importantly, how to avoid a learning curve that impacts patient outcomes. Given the current focus on quality outcomes, patient tolerance, and the drive for improved results, the learning curve is much slower than in previous decades. Therefore, there are studies that report on the training, mentoring, supervision, and assimilation methods of a pancreatic surgeon performing this surgery in a high-volume center, minimizing or avoiding the learning curve.

As the learning curve progresses, operating times are shorter, and intraoperative bleeding decreases. Regarding postoperative complications, such as the development of pancreatic fistulas, no increase in this complication has been observed in surgeons following the learning curve. 11

Clinically relevant overall morbidity (Clavien III-V) has also been observed to be low in most series. Surgeon-related factors often focus on technical experience, but we agree with most authors that, in addition to the surgical experience necessary to obtain optimal results in this complex operation, other factors exist, such as the decision to operate or not, operative time, operative decision-making regarding the extent of resection, the choice of reconstruction method, and the management of anatomical variability or disease severity, which are key components of experience in pancreatic surgery.

Institutional factors are key components. High-volume centers include expert diagnostic radiology services, experienced anesthesia teams, availability of competent interventional or therapeutic radiologic endoscopy, and clinical nursing and postoperative recovery pathways. A multifactorial approach to hepatobiliary training is necessary and critical to avoid causing patient harm due to surgeon inexperience. Although a detailed summary may be difficult to provide, several aspects are key ingredients for reproducibility among other centers and surgeons. 15, 16

First, using a standardized technique for this surgery, videotaping it, and reviewing it repeatedly appears to shorten the learning curve, improve surgical technique, and enhance outcomes. Second, a high-volume center

is clearly the optimal setting for achieving and maintaining excellent results; it is quite clear from the literature that high-volume centers provide the best opportunity for a good outcome. Similarly, the aforementioned system- and institutional-related factors are crucial for a surgeon's learning curve, helping to counteract any propensity for problematic postoperative events in the early learning phase. The availability of an experienced surgeon willing to consult and participate in the surgery is critical to minimizing the learning curve.

Enhanced recovery after surgery (ERAS) or fast-track protocols were first introduced in the 1990s to aid recovery after colorectal surgery. A decade ago, short-stay surgery was proposed for pancreatic malignancies according to Zamora et al. 15 The purpose of these pathways is to use evidence-based medicine in a multidisciplinary manner to optimize recovery from surgery and reduce postoperative pain, reduce complications, and shorten hospital stay.

ERAS protocols focus on the full spectrum of surgical care, including preoperative evaluation, intraoperative technology, postoperative care, and outpatient follow-up. Since their implementation in colorectal surgery, these protocols have been studied in a variety of other general surgical specialties with promising results. ERAS protocols have been studied after pancreatic surgery since the early 2000s; however, different institutional protocols were used in each study, making comparisons difficult. Furthermore, not all studies share details of the protocol used. To address the difficulty of comparing studies and implementing protocols across institutions, the European Society for Clinical Nutrition and Metabolism (ESPEN) and the International Association for Metabolism (IASMEN) recently published a framework to guide future studies in pancreatic surgery based on best practices. 15

Studies covering ERAS protocols are limited to retrospective case series or comparative case-control studies using historical controls. No completely retrospective, randomized studies have been published. There are several systematic reviews on ERAS protocols for the treatment of pancreatic pain, and a meta-analysis by Aristizabal et al. 16 This meta-analysis includes eight studies that meet the inclusion criteria, a total of 1,558 patients. Although the results were not overwhelming, this meta-analysis found a significant reduction in the risk of postoperative complications by 8.2%, with no increase in mortality or hospital readmission rates. ERAS protocols cover a variety of preoperative, intraoperative, and postoperative variables that are commonly accepted and monitored by institutions: preoperative hair removal, venous thromboembolism prophylaxis, neutral fluid balance, early mobilization, and normothermia. 16

Other variables included in these protocols for pancreatic surgery are not commonly accepted by all institutions: preoperative antibiotic therapy, preoperative biliary drainage, preoperative bowel preparation, leaving an intra-abdominal drain after surgery, preoperative fasting and carbohydrate loading, leaving a nasogastric tube after surgery, oral nutrition in the immediate postoperative period, use of somatostatin analogues, and postoperative analgesia. Regarding the antibiotic therapy used in this surgery, there is high

consensus: second- or third-generation cephalosporins and piperacillin-tazobactam in patients with biliary prostheses. Biliary drainage is performed in indicated cases (previously discussed in this article); bowel preparation is not recommended for pancreatic surgery; intra-abdominal drains are recommended for pancreatic surgery with early removal (on the third postoperative day) when the amylase level is less than three times the serum amylase level (POPF definition of ISGPF). Current guidelines from the American Academy of Anesthesiologists recommend cessation of fluids and solids two and six hours before anesthetic induction, respectively.

Ingesting a carbohydrate-rich fluid approximately two hours before anesthesia induction may reduce postoperative morbidity, as it can improve insulin sensitivity and preserve skeletal muscle without increasing aspiration and complications. 16

Gastric decompression via nasogastric intubation is one of the most dogmatically adhered to principles of gastrointestinal surgery, with little substantive evidence supporting its use. Although commonly thought to prevent pulmonary complications and reduce postoperative ileus, anastomotic leak, and fistula, its routine use has been shown to be unjustified and unnecessary. ERAS protocols for pancreatic surgery evaluate the removal of nasogastric tubes at the end of the postoperative period or on the first postoperative day, without increasing complications. Although delayed gastric emptying is a significant complication after pancreatic surgery, gastric decompression does not appear to be preventive and should only be used if this complication arises. There is no evidence to support digestive rest after upper tract surgery until bowel function is restored. 11,12,15

A multicenter randomized controlled trial indicated that withholding oral nutrition offers no benefit. Early resumption of oral intake on postoperative day 1 is a common feature of published studies evaluating ERAS protocols and is not associated with increased morbidity. Regarding the use of somatostatin analogs, a meta-analysis of 17 trials and 2,143 patients published showed that although they appear to reduce postoperative complications and the development of POPF in general, they do not reduce hospital stay, mortality, or clinically significant (grades B or C) outcomes. The use of somatostatin analogs is theorized to be useful for high-risk glands (soft texture, small duct diameter), but even this use is met with conflicting evidence.

Pain management can be difficult; few studies other than case series have been conducted after pancreatic surgery, but it appears that patient-controlled analgesia (PCA) combined with continuous infusion (CIP) appears to reduce opioid use. Alternatively, transverse abdominal plane (TAP) blocks may be equivalent to epidural catheter analgesia (ECA) in pain relief. 11,16,17,18

Other studies, such as those by Kowalsky et al. 17 and Lassen et al. 18, report that the use of ERAS protocols reduces mean hospital stay and costs, but does not reduce morbidity and mortality. In our country, there are still no reports on the use of ERAS protocols or short-stay surgery in the field of pancreatic surgery, which

would reduce costs for our state for the benefit of this population suffering from a condition that causes significant expenses from diagnosis to surgical treatment.

Conclusions

The increase in patients with duodenal-biliary-pancreatic junction neoplasia in Camagüey constitutes a growing health problem. A health program must focus on early diagnosis of this condition, thereby achieving early and timely treatment and reducing patient mortality. To achieve success, existing scientific and technological advances in secondary health care are not enough; attention must be directed toward the community to assess the factors that may delay early diagnosis. Patients will be referred to our center for evaluation by a multidisciplinary team. Once the diagnosis is confirmed, we will use Fast-track surgery to perform a Whipple procedure as a curative treatment. By analyzing the relationships between science, technology, and society, we arrive at an understanding of the comprehensive approach that should characterize the management of this health problem as a systemic and social technology: by strengthening the links with primary care, we can improve the Cancer Care Program, propose actions to prevent risk factors, and promote healthy attitudes to contribute to reducing its incidence.

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