



Understanding and treatment of chronic pancreatitis

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Abstract

Chronic pancreatitis is characterized by an inflammatory process of the pancreas, which is replaced by fibrosis and progressive destruction. The three major clinical features of chronic pancreatitis are pain, maldigestion, and diabetes. Chronic pancreatitis has a profound impact on social life and employment patterns. In the current issue, different topics highlight experimental models of chronic pancreatitis and bridge findings from recent research to bedside. Although the disease is still difficult to treat the current papers represent useful guidelines on how to approach chronic pancreatitis in the clinical settings with the major aim to improve the patient's suffering and quality of life.

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Key words: Chronic pancreatitis; Pathogenesis; Diabetes; Treatment

Core tip: Chronic pancreatitis has a profound impact on social life and employment patterns. In the current issue of *World Journal of Gastroenterology*, different topics highlight experimental models of chronic pancreatitis and bridge findings from recent research to bedside.

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CHRONIC PANCREATITIS

Chronic pancreatitis is characterized by an inflammatory process of the pancreas, which is replaced by fibrosis and progressive destruction. Clinically, the early phase is typically dominated by pain or recurrent episodes of pancreatitis and complications, whereas in the advanced phase symptoms related to exocrine and/or endocrine insufficiency are seen. Hence, the three major clinical features of chronic pancreatitis are pain, maldigestion, and diabetes. The incidence of the disease has been estimated to 2-10/100000 and seems to be increasing^[1], but there are major regional differences, and in some countries the disease is much more prevalent. It is also likely that there are many patients with, e.g., abdominal pain, diarrhea and malnutrition - without diagnostic classification - that in reality suffer from chronic pancreatitis. Apart from the illness the economic burden is also of major importance. Chronic pancreatitis has a profound impact on social life and employment patterns^[2]. For society the disease in year 2000 accounted for 327000 hospitalizations, 200000 emergency room visits and 532000 physician visits costing 2.5 billion \$ in the United States^[3]. Even though excess alcohol intake still is a major risk factor, recent data suggest that in some series less than half of the patients have alcoholic pathogenesis and much attention has been paid to "new" entities such as autoimmune pancreatitis^[4].

In the current issue of *World Journal of Gastroenterology*, different topics highlight experimental models of chronic pancreatitis and bridge findings from recent research to bedside^[5]. The pathogenesis of pancreatitis is reviewed using the recent "MANNHEIM" classification,

which may help us in correct diagnostics and subsequent treatment^[6]. Diagnosing of chronic pancreatitis has been challenging and imaging techniques are emerging. The main development has been within magnetic resonance imaging and ultrasonography. Two review papers outlined state-of-the-art as well as arising techniques such as diffusion-weighted imaging to indirectly assess the degree of fibrosis^[7]. Contrast enhanced ultrasonography and elastography are other examples of new techniques to *e.g.*, differentiate between malignancy and benign lesions^[8]. As support for imaging in diagnostics it is of major importance to assess the degree of exocrine and endocrine insufficiency. The so-called “direct or invasive methods” for assessment of exocrine insufficiency such as the Lundh test has been replaced by methods that are more suitable for screening, although imaging methods such as estimation of pancreatic juice flow during secretin stimulation may end up being a major supplement to screening methods. The pros and cons for different methods to unravel exocrine insufficiency are also outlined in the current issue^[9]. Treatment of uncomplicated disease is usually conservative, with the major aim to effectively alleviate pain, maldigestion, and diabetes. Malnutrition due to the lack of enzymes results not only in weight loss, but also in specific deficits in vitamins and nutrients that are essential for normal physiological functioning. Malnutrition as complication to chronic pancreatitis is often overlooked and it is of major importance that gastroenterologists are aware of this in the differential diagnosis of patients with weight loss. The paper about nutrition highlights that depletion of nutrients on the one hand and malabsorption (with potential changes in metabolic activity) on the other shall both be considered to avoid severe complications^[10]. Another frequent complication is pancreatic pain. The pain is severe and often postprandial resulting in malnutrition despite adequate enzyme replacement therapy. There has been an increasing understanding of the pathogenesis of pain in chronic pancreatitis. Hence, many patients suffering from undiagnosed extrapancreatic causes for the pain should be treated appropriately. Although the pain can be related to strictures and stones in the main pancreatic duct, new research has questioned the importance of the micro- and macrostructural pathological findings. Neurogenic pain due to destruction of the nerves may rather play a role for the pain in the majority of patients - and should be treated accordingly^[11]. In the paper about pain treatment there is an update on the current treatment options and it is highly recommended that clinicians are aware of the possibilities for optimal pain relief^[12]. Diabetes complicating chronic pancreatitis (type 3c) is a special entity that differs from type 1 and 2 as a variety of hormones apart from insulin are lacking - and the malabsorption also has to be taken into consideration. Despite the importance of this complication few papers have explored the pathogenesis and treatment of type 3c diabetes and this is also updated in the current issue^[13].

Finally, there are many challenges when it comes to pharmacological, endoscopical and surgical treatment of chronic pancreatitis. In the paper about pharmacology it is discussed how the influence of complications to the disease is affecting drug absorption and metabolism^[14]. Surgical and endoscopic interventions are mainly reserved for complications such as pseudocysts, abscesses, and malignancies. There has been a major development of endoscopy in diagnosing complications and treatment of complications such as endosonographic transmural drainage of pseudocysts and biliary strictures and this is discussed in the paper about endoscopy^[15]. Finally, surgery still has a place in treatment of chronic pancreatitis and should be considered in selected cases.

In conclusion important advances have been made in recent years with respect to our understanding of the pathogenesis of chronic pancreatitis. Although the disease is still difficult to treat the current papers represent useful guidelines on how to approach chronic pancreatitis in the clinical settings with the major aim to improve the patient's suffering and quality of life.

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