Acute and chronic pancreatitis: epidemiology and clinical aspects
Spanier, B.W.M.

Citation for published version (APA):

General rights
It is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), other than for strictly personal, individual use, unless the work is under an open content license (like Creative Commons).

Disclaimer/Complaints regulations
If you believe that digital publication of certain material infringes any of your rights or (privacy) interests, please let the Library know, stating your reasons. In case of a legitimate complaint, the Library will make the material inaccessible and/or remove it from the website. Please Ask the Library: http://uba.uva.nl/en/contact, or a letter to: Library of the University of Amsterdam, Secretariat, Singel 425, 1012 WP Amsterdam, The Netherlands. You will be contacted as soon as possible.
INTRODUCTION

The Dutchman Reinier de Graaf was one of the first to study the pancreas and its secretions. In his disputation on the nature and use of the pancreatic juice (‘De Succo Pancreatico’, 1664), he described a method of collecting pancreatic secretion by a temporary pancreatic fistula constructed in a dog. In the centuries hereafter, the pancreas has always been subject of both basic and clinical research.

This thesis focuses on inflammatory diseases of the pancreas: acute and chronic pancreatitis. Acute pancreatitis is defined as an acute inflammatory process of the pancreas that frequently involves peripancreatic tissues and/or remote organ systems. Chronic pancreatitis is an inflammatory process that leads to progressive and irreversible destruction of the pancreatic parenchyma. In the last decades the research on acute and chronic pancreatitis has greatly advanced our understanding of both, basic mechanisms of pancreatic (patho)physiology and the diagnosis and treatment of the diseases of the pancreas. This is not only the result of further development of biomedical research (e.g. molecular biology and genetics), but also the result of epidemiological studies and well designed, large scale randomized clinical trials.

In this thesis two main topics regarding acute and chronic pancreatitis have been addressed:
I Epidemiological studies on acute and chronic pancreatitis
II Clinical aspects of acute pancreatitis

For the epidemiological studies in the first part of this thesis we used three distinct nation-wide Dutch (disease) registries in collaboration with the agencies Dutch Hospital Data (formerly named Prismant) and the Central Bureau of Statistics (Statistics Netherlands).

The research on the clinical aspects of acute pancreatitis in the second part of this thesis results from our collaboration with the Amsterdam Gastroenterological Association (also known as the Amsterdam GUT-club). This association consists of gastroenterologists and gastrointestinal surgeons from 18 hospitals in the province of Northern Holland. At the end of 2002 the plan and design for an observational prospective multicenter cohort study regarding acute and chronic pancreatitis was lounged. Finally, in August 2003 all affiliated 18 hospitals had been started to include acute and chronic pancreatitis patients in the so called ‘EARL study’ (referring to the Dutchman Reinier de Graaf, Graaf means Earl). EARL is an acronym for: Epidemiology of Acute and chRonic pancreatitis: genetics, clinical management and outcome analysis. Inclusion ended in May 2006 and in total 512 patients were entered in the study database. In this thesis several issues concerning the clinical management of acute pancreatitis are addressed.
Outline of the thesis

Part I - Epidemiological studies on acute and chronic pancreatitis
In recent years a number of large scale epidemiological studies have been published on acute pancreatitis and, to a much lesser extent, on chronic pancreatitis. Remarkably, epidemiological studies from the Netherlands for acute pancreatitis are scarce and this is even more the case for chronic pancreatitis. For a general update, we performed an extensive review focusing on recent developments in epidemiology, aetiology, natural course and outcome of both acute and chronic pancreatitis [chapter 1].

National and regional disease registries are often used for epidemiological studies on pancreatitis. The validity of these studies depends heavily on the quality of the registries as data sources. Therefore, it is important to ascertain the completeness and accuracy of such registry databases. However, validation analyses of these registries are scarce. We analyzed the reliability of source data registered in the National Information System on Hospital Care (NISHC) registry which is used to classify hospital admissions for both acute and chronic pancreatitis in the Netherlands [chapter 2].

The incidence of acute and, although less well established, chronic pancreatitis have increased in the Western countries. It is likely, that the number of hospital admissions has increased correspondingly. In conjunction to the results of our validation study, we described in a more reliably way the trends in hospital admissions in the Netherlands for acute and chronic pancreatitis in the period 1992 to 2004 using the NISHC registry [chapter 3]. Additionally, we explored future trends in hospital admissions explored up to 2010.

The incidence and mortality of acute pancreatitis in the Netherlands have been described for the period 1985-1995. However, Dutch incidence and mortality rates are lacking for chronic pancreatitis. By following linkage of three distinct nation-wide Dutch (disease) registries, we analyzed the incidences of acute and chronic pancreatitis in the Netherlands for the period 2000-2005 as well as the mortality rates for the period 1995-2005 [chapter 4]. Finally, data on incidence and mortality rates over time are reported for Dutch and international standard populations.

Part II - Clinical aspects of acute pancreatitis
As mentioned, recent basic and clinical research have greatly advanced our knowledge about acute pancreatitis. Nutritional management is one of the research topics of interest. Usually, the initial treatment of acute pancreatitis consists of a nil per os regimen. The resumption of oral feeding depends on the improvement of, for example, abdominal pain and return of appetite. It is recommended to initiate artificial feeding, preferably by the enteral route, in those patients who cannot tolerate normal food within several days. To date there is substantial evidence that enteral feeding is superior to total parenteral nutrition. We reviewed the latest literature concerning several aspects of enteral
nutrition in acute pancreatitis [chapter 5]. A related issue of nutritional management in daily clinical practice is the adherence to the latest guidelines. Therefore, we analyzed the nutritional management in a Dutch cohort of patients with an established clinical diagnosis of acute and acute (recurrent) pancreatitis (EARL study) [chapter 6].

The diagnosis of acute pancreatitis is usually based on compatible clinical features and elevations in serum amylase and/or lipase greater than three times the upper limit of normal. If in doubt, the diagnosis of acute pancreatitis is best evaluated by a contrast-enhanced CT scan. A CT in the early course of acute pancreatitis may also be indicated to exclude alternative diagnoses or to demonstrate the development of early (peri)pancreatic necrosis. In clinical practice, there is often a debate if an early CT is really indicated. For this reason, we evaluated the practice and yield (alternative diagnosis and/or the development of early pancreatic necrosis) of CT scans acquired within 4 full days after symptom onset in our Dutch cohort of acute pancreatitis patients [chapter 7].

The two most common etiological factors of acute pancreatitis are gallstones (including small gallstones and/or microlithiasis) and alcohol abuse. Drugs are considered a relatively rare cause of acute pancreatitis with no unique clinical features that distinguishes it from acute pancreatitis due to other causes. Lately, several drug classification systems of drug-induced pancreatitis have been published. We describe in our observational cohort the use and discontinuation of pancreatitis-associated drugs at hospital admittance and discharge according to a recent evidence-based drug-induced pancreatitis classification system [chapter 8].