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.

UvA-DARE is a service provided by the library of the University of Amsterdam (http://dare.uva.nl)
At the end of this thesis on the epidemiology of acute and chronic pancreatitis as well as the clinical aspects of acute pancreatitis, it is of interest to address the need and potential for further research in these areas.

**Epidemiology of acute and chronic pancreatitis**

In [chapter 2](#) we demonstrate that the completeness and accuracy of data registries should be ascertained before their use for scientific purposes. Whereas national and international reports on incidence and prevalence of acute and chronic pancreatitis can only be compared meaningfully if the registries used are validated, we suggest that more validation studies should be done. We detected substantial miscoding at the individual patient level of discharge diagnoses of acute and chronic pancreatitis. Apparently, the labelling of acute versus chronic pancreatitis causes considerable confusion by the (junior and senior) physicians who compose the discharge letters or by the medical coders who select the discharge diagnoses. Actually, it would be of interest to assess their actual basic and clinical knowledge about acute and chronic pancreatitis.

A related issue concerns the definition of acute and, in particular, of chronic pancreatitis, which may not always be clear. For example, several classification systems have been developed for chronic pancreatitis that are often complex and only suitable for scientific research. It is challenging to develop a simple definition for chronic pancreatitis which can be applied easily in daily clinical practice.

In recent decades several large scale epidemiological studies on acute pancreatitis have been performed, which has not yet been matched by a similar interest in chronic pancreatitis (chapter 1). For acute pancreatitis it is clear that the incidence and number of hospital admissions increased in the Western countries. We show in our studies that this holds for the Dutch population too [chapter 3 and 4](#). For chronic pancreatitis we also reported a marked increase in hospital admissions for chronic pancreatitis, but the incidence for chronic pancreatitis fluctuated and did not show a steady increase. Considering that the incidence of both, acute and chronic pancreatitis clearly increase by age [chapter 4](#), we expect the observed increasing trends to continue in the near future in our ageing Dutch population. Generally, an increasing societal impact of acute and chronic pancreatitis is to be expected in all ageing populations, including increasing patient burden and consumption of health care. Hence, further research may be needed into the consequences of acute and chronic pancreatitis for quality of life, for (individual) socio-economic circumstances like sick leave or unemployment, as well as for the involved health care costs.

The most reasonable explanation for the increasing trends in incidence and hospital admissions in the Western countries is the increased prevalence of the main two etio-
logical factors: gallstones and alcohol abuse. Obesity a growing problem in almost all Western countries and is clearly linked to the development of gallstones. Furthermore, it has been shown that the incidence of acute pancreatitis follows the changes in alcohol consumption and that the per person alcohol consumption is related to the numbers of chronic pancreatitis discharges. Further, preferably large scaled, epidemiological studies are needed to substantiate these etiological and other explanations for incidence patterns of acute and chronic pancreatitis.

Clinical aspects of acute pancreatitis
Lately, basic and clinical research on different aspects of enteral nutrition in acute pancreatitis gave new input to the knowledge of pathophysiology of acute pancreatitis and changed the nutritional management in acute pancreatitis [chapter 5]. To date, randomized controlled trials have been started to confirm the safety and effectiveness of nasogastric feeding and to investigate the role of early nutrition support. It is to be expected that these large scale trials will give more definite answers and that several management guidelines will be updated. In our observational cohort we showed that nutritional management resulted in a limited total starvation time for a vast majority of patients admitted for acute pancreatitis [chapter 6]. Whether or not these patients suffered from undernutrition at or during admittance was not a subject of this study. It seems likely that some patients may have suffered from undernutrition to some extent. Also, it is possible that, for example among patients admitted with an alcoholic pancreatitis, already some degree of undernutrition was present. Generally, it has been shown that undernutrition is associated with a worse disease outcome and a higher morbidity. However, the causal link between undernutrition and the outcome of acute pancreatitis has not been properly investigated. Further observational studies are needed to investigate the presence and/or development of undernutrition in mild and severe acute pancreatitis, the possible relationship with different etiological factors and whether undernutrition negatively affects the outcome of acute pancreatitis.

The use of a CT scan early in the course of acute pancreatitis may be indicated to identify early (peri) pancreatic necrosis in patients with signs of organ failure or systemic inflammatory response syndrome. However, the scientific proof of the early presence of pancreatic necrosis is poor and it is questionable if this finding will lead to a change in clinical management anyway. We showed in our observational cohort with mainly mild acute pancreatitis patients that no early CT scan detected the presence of pancreatic necrosis [chapter 7]. Further prospective cohort studies are needed to give more definite scientific input to the concept of the early presence of pancreatic necrosis. Because of the low yield and no management implications we advised that clinicians should be more restrictive in the use of early CT, in particular for mild acute pancreatitis. It is of interest to investigate if early CT scans indeed are less often acquired overtime.
Drugs are considered a relatively rare cause of acute pancreatitis. However, we showed that pancreatitis-associated drugs are very frequently used at admission [chapter 8]. It is not clear whether this is a reflection of their frequent use in general or of a true causal relationship between the use of these drugs and the development of acute pancreatitis. Also, an unresolved issue is how some drugs actually promote the development of acute pancreatitis. Larger prospective epidemiological studies are warranted to establish the true risk of acute pancreatitis for various drugs. A uniform classification system that is accepted by a wide audience of researchers and physicians, would be of great help to this end. With the results of these epidemiological studies, experimental (animal) studies may be indicated to resolve the pathophysiology of drug-induced acute pancreatitis.

For sure, the pancreas has been and will remain the subject of fascinating and challenging basic and clinical research for several decades.