



Chronic pancreatitis and pancreatic diabetes in India

Balakrishnan, Harish Kumar,
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The Indian Pancreatitis Study is a longitudinal multicenter follow-up Study of chronic pancreatitis patients in India by a group of dedicated workers,

The Indian Pancreatitis Study Group

The first project of this group is a National Pancreatitis Registry, **the Indian Pancreatitis Registry.**

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Preface

Chronic pancreatitis is a worldwide disease and one of its major complications is diabetes mellitus. In the western world the commonest cause of this disease is alcohol abuse. We also know that a frequent cause of recurrent acute pancreatitis is gall stone disease. The Marseille, Cambridge and Atlanta symposia have all tried to define and classify pancreatitis. From the earlier view evolved at the Marseille symposium that acute and chronic pancreatitis are different diseases, we have come a long way and now most workers tend to agree that acute pancreatitis could progress to chronic pancreatitis. In fact, it is still a matter of some debate whether the first lesion in alcoholic pancreatitis is an acute or a chronic one. The discovery of the genetic mutations in hereditary pancreatitis by Whitcomb and colleagues has given a new dimension to these debates. The several reports of genetic mutations associated with alcoholic pancreatitis and idiopathic pancreatitis from the West have created a lot of excitement among workers in this field.

Fifty years ago Zuidema described a group of young malnourished diabetics from Indonesia who also had pancreatic fibrosis and calcification. Subsequent reports of this disease from different parts of Asia and Africa among the malnourished youth of poor tropical countries earned this condition recognition as a separate disease entity and the sobriquet of "tropical pancreatitis". Because of the peculiar characteristics of this disease and its differences from alcoholic pancreatitis, this entity attracted worldwide attention. The largest number of patients of tropical pancreatitis has been described from the small south-west state of Kerala in India. Originally thought to be restricted to the south of India, there are now reports of tropical pancreatitis from many other regions of India (even outside the strict definition of "tropics"). The etiology of this disease remains an enigma till today. In 1985, the World Health Organization brought out a Technical Report on Diabetes Mellitus in which they described the entity of malnutrition related diabetes with its subgroups of fibrocalculous pancreatic diabetes (FCPD) and protein deficient pancreatic diabetes (PDPD). FCPD reflected the diabetologist's view of tropical pancreatitis.

In 1987 a National Workshop on Chronic Pancreatitis in India was organised by Balakrishnan at Trivandrum under the auspices of the Indian Society of Pancreatology, bringing together workers from all over India, to share their experience on chronic pancreatitis in different parts of the country. The proceedings of this workshop, edited by Balakrishnan, were published as a monograph, "Chronic Pancreatitis in India", by the Indian Society of Pancreatology. This book brought out, for the first time, a comprehensive review of the disease in India, and was acclaimed globally by the fraternity of workers in the field of pancreas.

Much has happened in the area of pancreatitis research after this publication. Newer definitions, classifications, tools for investigations, animal models, insight into the molecular mechanisms of the initiation of the earliest pancreatic injury, the role of cytokines and the work on genetic mutations in pancreatitis (PRSS1, SPINK1 and CFTR) have all taken the frontiers of pancreatic research to hitherto unknown territories. In the light of all these developments, we thought it is time to take a fresh look at pancreatitis in India and see what has ensued during the past several years, and particularly, what has happened as far as epidemiology and etiology of chronic pancreatitis is concerned. A National Workshop on Tropical Pancreatitis / Fibrocalculous Pancreatic Diabetes in India was conducted at the Amrita Institute of Medical Sciences and Research Center, Cochin from 17 to 19 December, 2004. All the participants were requested to contribute chapters detailing their experience and views on chronic pancreatitis, to a book, which was subsequently going to be published. The result is this book. We offered the authors a certain degree of liberty with their articles in size, format, presentation and opinion. This book is a true reflection of the divergent observations of different workers, their controversial views and hypotheses. We deliberately wanted to present controversies, to make this a starting point in our further search for the truth. Is the 'tropical pancreatitis' some of the workers describe really tropical pancreatitis, or simply idiopathic pancreatitis? How do you define tropical pancreatitis? Does the old definition still hold good? Are there fundamental differences between alcoholic pancreatitis and tropical pancreatitis? Does cassava have any role in the etiology? Why

is the natural history of tropical pancreatitis changing? Are tropical pancreatitis and fibrocalculous pancreatic diabetes the same disease or different diseases? Is it a pancreatitis or a pancreatopathy? What is the role of genetic mutations? In trying to answer questions, this book raises fresh question after question. It reflects the conflicting views and observations of workers in this large subcontinent on a baffling clinical problem.

There is a stimulating article by Whitcomb on the possible interactions between different "domains" of toxins, genes and altered immunity in the causation of recurrent acute pancreatitis and the role of recurrent acute pancreatitis in the progression to chronic pancreatitis. Balaraman Nair propounds his hypothesis that it is an atrophy of the pancreas with little inflammation, in tropical pancreatitis. Sandhyamani, with her feeding experiments in monkeys, shows that it is the imbalance between proteins and carbohydrates in the diet that leads to pancreatic injury.

Azad Khan shares with us his experience in FCPD in Bangladesh and examines its relationship with tropical calcific pancreatitis. Mohan and Eesh Bhatia describe the endocrine changes in tropical pancreatitis/FCPD. They advance their arguments about whether tropical pancreatitis and fibrocalculous pancreatic diabetes are the same disease or are different diseases. Balakrishnan examines the changes that have occurred, over the years, in the clinical picture and behaviour in tropical pancreatitis and suggests that it is, perhaps, time to redefine tropical pancreatitis.

Chandak presents the largest series of genetic mutations in pancreatitis reported from the subcontinent. Tripathy describes his vast experience with malnutrition related/modulated diabetes mellitus. An array of eminent pancreatic surgeons such as Sikora, Wig, Sudhindran, Ramesh and Mohapatra share their experiences, preferences and results of surgery.

There are many other chapters, by Choudhuri, Garg, Roop Rai, S.P. Singh, Unnikrishnan, Ganesh Pai, Varghese Thomas and Nagalotimath, describing the varied spectrum of the disease, all illuminating and interesting, as you read on.

Despite all these uncertainties, we have gathered a huge amount of data on the occurrence of tropical pancreatitis in India. We have clear descriptions about its pathology. The work of Sandhyamani has opened a new area for further research. There are preliminary data coming in from different parts of the country on genetic mutations in the disease. We are able to care for our pancreatic diabetics much better now than before and they live longer. We are trying out newer endoscopic modes of therapy. Over the years, our surgeons have accumulated a vast store of experience in optimizing surgery in chronic pancreatitis and developing standardized surgical procedures. These are all areas in which progress has been made. We would like to work and arrive at the etiology/etiological factors of this disease and device early preventive measures, if feasible.

Many have helped us in bringing out this book. This is a publication of the Indian Pancreatitis Study Group. We wish to specially thank **Biocon Limited** who readily agreed to sponsor this book and the Printers, **L.G. Creations, Bangalore**, for the excellent job they have done. Mr. N. Sudhakaran, Secretary, Institute of Digestive Diseases, Amrita Institute of Medical Sciences, Cochin deserves our special thanks for the commendable secretarial assistance rendered. This book, we are afraid, may be having a few technical flaws, for which we would appeal to the readers to bear with us.

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India,
2006**

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