Consensus Statement from the ‘Workshop on Types of Diabetes Peculiar to the Tropics,1995’ *

It is widely accepted that clinical manifestations of the ‘Diabetes’ syndrome in Tropics and sub-tropics differ in certain respects from those commonly observed in the populations of European origin.

Based on a large number of reports on observations from several Tropical and Developing countries and intensive work especially at certain centres in India the National Diabetes Data Group (1979),WHO Expert Committee (1980) and finally the WHO Study Group (1985) on diabetes recognised Malnutrition related Diabetes Mellitus (MRDM) as a class of Clinical Diabetes and (b) Protein-Deficient Pancreatic Diabetes(PDPD).

This recognition was of great help, but could not succeed to lay at rest the divergent opinions and controversies on these forms of diabetes, particularly with respect to PDPD, possibly as it occurs only in certain geographic areas where malnutrition is prevalent (not in all),as well as for lack of specificity in its diagnostic criteria and adequate information on its genetic and pathogenic character. Soon the term Protein-deficient Pancreatic diabetes was more or less replaced by Protein-Deficient Diabetes Mellitus (PDDM)as there was no evidence of exocrine pancreatic involvement in this clinical setting.

Further it was observed that FCPD did occur frequently in well nourished individuals in the absence of alcohol intake ,gall bladder disease of hyperparathyroid state. Its classification alongside with other primary forms of diabetes and the suggestions that it occurs specifically in malnourished subjects was widely felt to be inappropriate.

In order to find some solutions to these controversies we, members of the Diabetes Research Group, Cuttack (Orissa, India) decided to convene an International Workshop to thrash out all available data on the subject and evolve a consensus which would be placed before the WHO, IDF, NIH and other World bodies for their information.

This workshop, we decided, should be different from such efforts elsewhere (particularly one held by WHO and Wellcome Foundation at London, 1998) by demonstration of clinical material, i.e. patients manifesting the types of diabetes considered to be peculiar to the tropics, so that discussions may not be confined to veering around perceptions without scope for verification.

It may be stated here that Cuttack was the place in India where J-type diabetes (PDDM) was first recognised (late 50’s) and the crucial role of malnutrition on the manifestation of its atypical features was first conceived. Further it is one of the few places where patients with PDDM as well as those with FCPD are both seen in adequate numbers.

The workshop was held here as scheduled on October 17-19, 1995. Presentations included clinical data, experimental observations, pathology of the pancreas, genetic HLA connections, GAD and ICA antibody findings as well as 36 patients belonging to categories designated as PDDM, FCPD and lean NIDDM.

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CONSENSUS STATEMENT

A workshop was held in India attended by 60 delegates mostly from four developing countries (India, Bangladesh, China and Ethiopia) with observers from Europe and America.

It is now well recognised that diabetes mellitus in tropical regions and in some developing countries presents clinically differently from IDDM and NIDDM in the Western World and in developed countries.

WHO acknowledged this in 1985 by recognising a third class of diabetes, designated MRDM and subdivided into FCPD and PDPD (subsequently often called PDDM). Since then considerable information has been obtained about diabetes in the tropical regions. Such knowledge was presented and discussed at the workshop to serve as a stimulus for further research into aetiological, epidemiological and clinical aspects of such diabetes. Another category of diabetes was also discussed, NIDDM in subjects of low body weight (also referred to as ‘Lean NIDDM’).

All cases of diabetes mellitus can be divided into IDDM and NIDDM according to their current clinical and metabolic state. It was the consensus of the workshop that although the term MRDM has served a valuable purpose it now be surplanted by the following.-

* Based on International Workshop on Types of Diabetes Peculiar to Tropics. 1995’ held at Cuttack, India, October 17-19.
a) Malnutrition modulated (MMDM) to replace PDPD.

b) Fibrocalculous pancreatic diabetes (FCPD), to be considered as a specific form of diabetes, clinically either NIDDM or less frequently, IDDM and

c) The low body weight (BMI less than 18.5 kg/m2) end of the spectrum of NIDDM, to replace the term ‘lean NIDDM’.

From our discussion the following three consensus statements were advanced.

FIBROCALCULOUS PANCREATIC DIABETES

1. Fibrocalculous pancreatic diabetes (FCPD) is a form of diabetes with a high prevalence in tropical and developing countries.

2. FCPD is due to chronic calculous pancreatopathy and not due to chronic alcoholism or other recognised ascribable causes such as hyperparathyroidism.

3. It is usually seen in young and malnourished individuals but also occurs in others.

4. Diabetes and pancreatic calculi and/or ductal dilatation are essential features. Recurrent abdominal pain and steatorrhoea are other important features but absence of the latter features does not preclude the diagnosis.

5. The clinical profile of diabetes shows a spectrum of hyperglycaemia varying from severe to mild. Ketosis is uncommon.

6. Pancreatic calculi are usually large, multiple and intraductal. Marked ductal dilatation and fibrosis are usual, inflammatory changes are uncommon.

7. Abnormal exocrine pancreatic function is invariably present but is often demonstrable only by investigations.

8. FCPD is associated with an increased risk of pancreatic carcinoma.

9. Management of FCPD includes treatment of diabetes, oral enzyme replacement and relief of pain. Surgery may be required for severe intractable pain and for other indications.

10. The etiology of FCPD is uncertain. The roles of nutritional, environmental and genetic factors need further investigation.

MALNUTRITION -RELATED DIABETES MELLITUS (MRDM, PDPD, PDDM)

1. There is a clinical syndrome of diabetes mellitus that occurs in young malnourished individuals in developing countries.

2. Their clinical features, differ from the usual clinical presentations of IDD or NIDDM as described in developed countries and from that of FCPD.

3. They are insulin requiring but not ketosis prone.

The designation recommended for this group of patients is

MALNUTRITION -RELATED DIABETES MELLITUS (MMDM)

This term replaces the other nomenclatures such as, Malnutrition related Diabetes Mellitus (MRDM), protein-Deficient Pancreatic Diabetes (PDPD) and protein deficient Diabetes Mellitus (PDDM).

The clinical characteristics of MMDM include-

1. Early onset of diabetes - usually below 30 years of age.

2. Insulin requiring (to obtain adequate glycaemic control).


4. Absence of imaging evidence of pancreatic calculi or ductal dilatation.

5. Low BMI (usually below 17) with other clinical features of malnutrition and often with growth retardation.

NIDDM IN LEAN SUBJECTS

This group supports the WHO classification of NIDDM into obese and non-obese sub classes.

In some developing countries, Non-obese patients constitute the more common category and a proportion of them have BMI of less than 18.5.

There are many factors which are not well understood in these subjects with NIDDM and low body weight, further research is required in this group.

Chairpersons

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