

# **DIABETES PREVENTION AND CONTROL IN PAKISTAN**

## **FIRST NATIONAL ACTION PLAN**

**Based on the conclusions of the National Workshop on Diabetes Control, held in Islamabad on 17 – 18 November 1995**

### **1. INTRODUCTION AND BACKGROUND**

1.1 Considerable changes in disease pattern are taking place in developing countries. While the prevalence of infectious diseases and nutritional deficiencies is progressively declining, a concomitant increase is noted in the prevalence of chronic non-communicable diseases (NCD). Example of such diseases are cardiovascular diseases, diabetes mellitus and cancer.

This epidemiological transition is now clearly seen in the Eastern Mediterranean Region. Factors contributing to the speed of this change include rapid socioeconomic development and the associated changes in life-style characteristics. Obesity has become more prevalent; food energy availability has generally risen beyond requirements with a trend towards increased sugar consumption in most Member States.

Improvement in health care services has also led to control of infectious causes of mortality and better diagnosis of non-communicable diseases. Increased longevity is another important factor that is contributing to the increase in the occurrence of non-communicable diseases; life expectancy has been progressively increasing over the last thirty years in the Region, reaching in some countries figures which are similar to those seen in the industrialized world.

Analysis of the available data in the Region demonstrates the high susceptibility of some Eastern Mediterranean populations to non-insulin dependent diabetes mellitus (NIDDM) and confirm the importance of diabetes in the Region. Additionally, cardiovascular diseases (CVD), a major complication of diabetes has now become the leading identifiable cause of death in some countries. Other diabetic complications are already major causes of morbidity, disability and premature death. Hospital based data confirm this trend and also indicate premature morbidity and mortality from this group of diseases.

Despite the high prevalence of diabetes and its complications, there is a striking lack of organized programmes designed to prevent diabetes. In addition, essential health care requirements and facilities for self-care are often inadequate in many countries of the Region.

1.2 Among the environmental factors involved in causing diabetes, physical inactivity, obesity and fat distribution as well as certain nutritional trends emerge as the major causes of deterioration of glucose tolerance. Both obesity and physical inactivity increase insulin resistance. Exercise has been shown to have a protective effect against NIDDM. It has a beneficial effect in improving insulin sensitivity and glucose tolerance. Available evidence also implicates obesity as a risk factor for NIDDM and

there is sufficient evidence to indicate that increased dietary intake of saturated fats and decreased intake of dietary fibre can result in decreased insulin sensitivity and abnormal glucose tolerance.

Thus primary prevention of diabetes can be achieved by decreasing insulin resistance through correction of obesity and increased physical activity and by the promotion of healthy nutritional trends (reduction in the consumption of fat and refined carbohydrates and increase in fibre content of the diet).

In practical terms, primary prevention of NIDDM should be integrated into intervention programmes for other non-communicable disease sharing common risk factors, such as CVD and cancer.

In view of the high magnitude of already established cases of diabetes there is also a pressing need to prevent complications and disabilities caused by diabetes. Measures employed include effective treatment and good glycaemic control as well as early detection of complications.

The development of long-term complications is linked to hyperglycaemia and poor control of diabetes accelerates their progression. Therefore the major goal of diabetes management should be to achieve good control of diabetes. To meet this objective, good management should be ensured and the standards needed for appropriate health care delivery to people with diabetes should be made available.

1.3 Pakistan, like many other countries of the EMR now recognize the need to initiate action to prevent diabetes, its complications and the resulting disabilities at the national level. The Ministry of Health has established a collaborative programme with WHO on the prevention and control of diabetes. A national coordinator has also been appointed and given the responsibility of formulating a plan of action and implementing control activities.

## **2 SITUATION ANALYSIS**

### **2.1 The Magnitude of Diabetes in Pakistan**

The recent prevalence survey on diabetes mellitus conducted by Diabetic Association of Pakistan in collaboration with WHO shows that diabetes prevalence is over 10% in both sexes in the people aged 25 years or above. Impaired Glucose Tolerance (IGT) was found to be over 13% in women and over 7% in men. Thus overall Abnormal Glucose Tolerance (AGT) was present in 20% of the subjects examined. Prevalence of glucose intolerance increased with age in both sexes. Age specific prevalence of IGT was higher for women than men at almost all ages. Central obesity and positive family history were strongly associated with diabetes. The association of central obesity was greater for women than for men.

## **3 OBJECTIVES OF THE NATIONAL PLAN**

### **3.1 General Objectives**

- 3.1.1 To initiate a programme for primary prevention of diabetes, fully integrated into strategies to control other major non-communicable diseases like Cardiovascular Diseases and Cancer.
- 3.1.2 To improve the management of persons with diabetes, and their access to essential health care, in order to prevent complications and improve quality of life.

### **3.2 Specific Objectives**

- 3.2.1 Achievement of favourable changes in dietary patterns, smoking rates and physical activity (short-term target).
- 3.2.2 Reduction of the number of new cases of diabetes complications (long-term target)

## **4 STRATEGIES**

### **4.1 Epidemiological Studies (Data Collection)**

Accurate baseline data on the epidemiology of diabetes in Pakistan is not only needed to document the size of the problem but is also essential to monitor future progress if an intervention programme is established. The data generated by the recent epidemiological surveys conducted by the Diabetes Association of Pakistan serve this purpose as far as the populations studied are concerned.

Also needed are reliable data on the clinical characteristics of diabetes in Pakistan which should also include the frequency and severity of acute and long-term complications. Such data are essential for monitoring tertiary prevention activities.

### **4.2 Primary Prevention**

The major barriers include the high illiteracy rate and the lack of infrastructure for such a programme. However, because of the increasing magnitude of diabetes and other non-communicable diseases, now is the proper time to initiate activities to establish a national programme for healthy lifestyles and primary prevention of non-communicable diseases.

- 4.2.1 Data collection is the starting point. Baseline information on dietary habits, obesity, smoking and physical activity should be obtained and should constitute the preliminary activities of primary prevention.
- 4.2.2 From the managerial point of view, the Ministry of Health should identify an effective mechanism to ensure that it assumes its role as initiator and coordinator of the primary prevention programme. One possible action is to appoint a focal point responsible for non-communicable diseases. The other partners in the planning for the programme are the Diabetic Association of Pakistan, Cancer Society, NGOs and related MOH institutions. Close links should be built with other ministries like Food and Agriculture, Education, Information, Science and Technology, Universities and Research institutions,

as well as NGOs in addition to the various concerned departments of the Ministry of Health such as nutrition unit, health education unit and health services and Preventive medicine departments.

### **4.2.3 Education**

Public education is needed to alert the population to the major predisposing factors for diabetes and how to avoid or correct them. School health education is of paramount importance particularly concerning primary prevention of diabetes. Health care professionals require intensive training and continuing education if optimal health care for people with diabetes is to be achieved. Education of nurses and the strengthening of the cadre of diabetes nurse educators will receive special emphasis. Activities for education of health care professionals should focus primarily on master trainers.

Education of people with diabetes and their families will be conducted, as part of organized education programme, by educators and health care professionals under continuous evaluation.

### **4.3 Secondary Prevention: Screening for diabetes**

The strategy will be based on screening for gestational diabetes (GDM). During the first antenatal visit all women should be tested for glycosuria. A positive test is an indication for an oral glucose test. At 24-28 weeks gestation, women with high risk will be subjected to a blood glucose measurement 2 hours after 75g glucose load.

Case finding should be promoted. As part of health education initiative that will be implemented by this plan of action, people above the age of 40 with specific risks such as obesity and a positive family history of diabetes should be advised, whenever possible, to have blood glucose measurement (or even urine test for glucose) to rule out diabetes.

### **4.4 Provision of Appropriate Standards of Health Care.**

The essential standards of health care for people with diabetes have been clearly identified by the participants of the national workshop. They are identical with those identified by WHO/EMRO. In PHC, because of the costs involved, urine testing for glucose may be adequate. A blood glucose measurement should be made available at the District Health level. It is imperative to ensure that these standards are met by health care providers and that insulin should be freely available to all IDDM patients. Beef insulin is as good as human insulin and there is no need for expensive preparations. School health services should ensure that they develop the capabilities to care for children with IDDM. In NIDDM same cost effect strategy should be adopted for Oral Hypoglycemic Agents (OHAs).  
Education is of paramount importance.

### **4.5 Clinical Practice Guidelines for the Management of Diabetes**

The development of long-term complications is strongly influenced by hyperglycemia. Poor metabolic control accelerates their progression. To prevent

complications, optimal health care and good metabolic control should be ensured. Even when complications have developed, appropriate medical intervention can still prevent disability and premature death in many cases.

The WHO/EMR guidelines have found to be appropriate and have been adopted with some modifications which are based on local resources and circumstances.

## **5 PLAN OF ACTION**

The following activities will be implemented:

### **For the year 1996 – 1997**

- Organization of a meeting coordinated by the Ministry of Health to initiate a plan for primary prevention of diabetes focusing mainly on health education and data collection. The meeting should include Diabetic Association of Pakistan, Cancer Society, Pakistan Cardiac Society
- Development of guidelines for screening for GDM and dissemination among health care professionals in public and private health care institutions and clinics in all aspects of diabetes care.
- Planning and implementing studies to obtain standardized data on dietary patterns, prevalence of smoking and obesity in the provinces and population groups.
- Planning and implementing of a multicentre study on screening of pregnant women for diabetes.
- Development of a demonstration project for integrating diabetes care in PHC based on WHO/EMR standards of care.
- Establishing mechanisms to ensure that drugs and supplies necessary for self care are made freely available and affordable to people with diabetes.
- A changeover to a unified strength of insulin preparations should take place in 1997. All insulin preparations should be changed to the U-100 strength. Planning of the changeover should be the responsibility of the diabetes control programme and preparation of educational material (pamphlets, posters etc.) and dissemination of information to the public, all people with diabetes and health care professionals should be made in 1996. Close coordination and collaboration with insulin and syringe manufactures and suppliers should be ensured.
- Conducting a national training seminar for master trainers for primary health care physicians, nurses, dietitians and other health care professionals in diabetes care on an annual basis starting in 1996.
- Preparation of model education material, in urdu and Regional languages, for people with diabetes and their families in all aspects of diabetes care.

- Preparation and dissemination of educational material on diabetes prevention for the community.

### **For the year 1997 / 1998**

- Continue with the above-mentioned activities.
- Conducting national training seminar / workshop for mater trainers.
- Evaluation of the programme. National workshop with WHO.
- Adjustment and preparation of the plan for 1999-2000.

## **6. MONITORING, EVALUATION AND FEEDBACK**

### **6.1 Process Measures:**

- Were the required data collection activities conducted?
- Were patient and public educational material prepared as planned?
- Were courses / seminars for health care providers performed?
- Were drugs and supplies necessary for self care made available and affordable for people with diabetes?

### **6.2 Outcome Measures:**

- Number of hospital admissions with acute complications.
- Number of episodes of ketoacidosis and hypoglycaemia.
- Prevalence of smoking.
- Dietary trends.
- Incidence.
- Mortality.
- Limb amputations.
- New cases of blindness
- New cases of ESRF

## **7 FUTURE PROGRAMME**

# **PARTICIPANTS AT THE NATIONAL MEETING ON DIABETES CONTROL**

**ISLAMABAD 17 - 18 NOVEMBER 1995**

Coordinator: Prof A. Samad Shera

## **Facilitators**

---

1. Dr Hilary King (WHO - GENEVA)
2. Prof. A. Alwan (WHO - EMRO)
3. Dr. Sawat Ramaboot (WHO - Pakistan)
4. Prof. Nek Mohammad Shaikh
5. Prof. Noorjahan Samad
6. Prof. A. Samad Shera
7. Prof. Mashoor Alam
8. Prof. M. Ata-ur-Rahman
9. Dr. Khawaja Iftikhar Ahmad
10. Prof. Wazir Mohd Shaikh
11. Prof. M. Ishaque Shaikh
12. Prof. Hayat Zafar
13. Prof. Naseemullah
14. Prof. Tariq Bhutta
15. Lt. Gen Mahmud Akhtar
16. Maj Gen Nasirul Islam
17. Prof. Khalida Akhtar
18. Prof. Khalida Waheed
19. Dr. N. Gichki
20. Mr. Surat Khan Mari
21. Dr. Akhlaque Hussain
22. Dr. Farida Nasir
23. Dr. Sabihuddin Baqai
24. Dr. S. N. Masood
25. Dr. Ghazala Rafique