

Peri – Operative Management of Diabetic Patients

ESSAY

Submitted for partial fulfillment of the Master degree
in Anaesthesia

BY

Ahmed Mohamed El Sayed El Hinnawi
M.B.B.CH. Faculty of Medicine
Ain – Shams university

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Supervised by

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Prof. Dr. Samir Yowakim Bassilli
Professor of Anesthesia and Intensive care
Faculty of Medicine Ain – Shams university

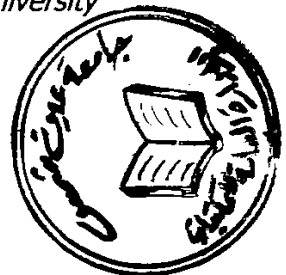
Prof. Dr. Amir Ibrahim Salah
Professor of Anesthesia and Intensive care
Faculty of Medicine Ain – Shams university



Dr. Mervat Mohamed Marzouk
Assist. Professor of Anesthesia and Intensive care
Faculty of Medicine Ain – Shams university

Faculty of Medicine
Ain Shams University

1999





بسم الله الرحمن الرحيم

قالوا سبحانك لا علم لنا إلا ما علمتنا

إنك أنت العليم الحكيم

صدق الله العظيم

سورة البقرة - الآية ٣٢

Acknowledgment

I wish to express my appreciation to **Prof. Dr. Samir Yowakim Bassilli** professor of Anesthesia and Intensive care, Faculty of Medicine, Ain – Shams University, his continuous support, encouragement and his generous help, all made the completion of this work possible.

My great appreciation and gratefulness goes to **Prof. Dr. Amir Ibrahim Salah** Professor of Anesthesia and Intensive care Faculty of Medicine Ain – Shams University, who helped me, guided me and supervised me continuously during the preparation of this work.

I am also greatly indebted to **Dr. Mervat Mohamed Marzouk** Assist. Professor of Anesthesia and Intensive care Faculty of Medicine Ain – Shams University, for her great contribution and help.

Ahmed Mohamed El Sayed El Hinnawi

Introduction

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The earliest retarded reference to diabetes Mellitus was ascribed to the ancient Hindu Susruta (600B.C), “when the doctor states that a man suffers from honey urine, he has declared him incurable”. (*Mann, 1971*).

A more detailed clinical description which included mention of the “melting down of the flesh into urine, excessive thirst, and increased urination” is provided in the works of Aretaeus Cappadocia (A.D 81-138)

Diabetes Mellitus is a disorder of metabolism caused by an absolute or relative lack of insulin. It is characterized by hyperglycemia in the postprandial and/or fasting state, and in its most florid forms is accompanied by ketosis and protein wasting.

The prevalence of diabetes mellitus which is found to be 4-5 % of the general population, the micro & macrovascular changes associating long term diabetes that could be ouvert or clinically manifested, as well as the acute life threatening complications (hyperosmoler hyperglycaemic non ketotic coma, diabetic ketoacidosis, hypoglycaemic Coma) associating poorly controled diabetic patients or resulting from its medications (oral hypoglycaenic drugs and insulin). All such risk factors

together with the increased incidence of peri-operative morbidity and mortality necessitate discussing the peri-operative anaesthetic considerations for diabetic patients undergoing surgery which is the subject of this thesis .

Pathophysiology of Diabetes Mellitus



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Definition & classification

Diabetes Mellitus is a disorder of metabolism caused by an absolute or relative lack of insulin. It is characterized by hyperglycemia in the postprandial and/or fasting state, and in its most florid forms is accompanied by ketosis and protein wasting.

Diabetes had long been classified on the basis of specific clinical features (age of onset, insulin dependence) into two major types: Juvenile – Onset & Maturity onset diabetes. The large overlap of age of onset among insulin –dependent and non insulin dependent diabetic patients indicates that descriptive terms based solely on age of onset, though time honored are often inaccurate. (*Froguel et al.,1992*).

Studies on the role of genetic and acquired factors in the etiology of diabetes indicate that primary diabetes is not a single disorder but a syndrome which is heterogeneous with respect to etiology as well as pathogenesis. (*Thai & Eisenbarth.,1993*). These findings suggest that potential etiologic factors such as the presence

of Islet cell antibodies and specific HLA (histocompatibility) haplotypes should be considered in the classification process. (*Rossini et al., 1993*).

According to the classification recommended by the national institute of health (NIH) 1971 the following diagnostic groups are recognized

Spontaneous diabetes mellitus

Type I (insulin – dependent) diabetes (IDDM) formerly called juvenile-onset diabetes) .

Type II (non-insulin-dependent) diabetes (NIDDM) formerly called maturity onset diabetes).

Secondary diabetes

Pancreatic disease (pancreoprival diabetes, e.g., due to pancreatectomy , pancreatic insufficiency, hemochromatosis).

Hormonal excess secretion of counterregulatory hormones (e.g., acromegaly, Cushing's syndrome pheochromocytoma).

Drug-induced (e.g., potassium- losing diuretics, contrainsulin hormones, psychoactive agents, phenytion)

Associated with complex genetic syndromes (e.g. ataxia telangiectasia, Lawrence-Moon-Biedle syndrome, myotonic dystrophy, Friedreich's ataxia)

Impaired glucose tolerance (formerly called chemical diabetes, asymptomatic diabetes, latent diabetes and subclinical diabetes): fasting plasma glucose concentration normal; 2-h value on glucose tolerance test 140 mg / dl but LT 200mg/dl.

Gestational diabetes : transient glucose intolerance, which has onset in pregnancy..

In over 90 percent of cases diabetes is a spontaneous disorder which cannot be ascribed to another, more primary disease. Two major types of spontaneous diabetes are recognized: type I, or insulin dependant formally called juvenile onset diabetes and types II, or non insulin dependent diabetes formally called maturity onset diabetes, the contrasting clinical genetic and immunologic characteristics of these types of diabetes are summarized in table (1). (*Pearse., 1987*).