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**DIABETIC NEPHROPATHY**

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# **DIABETIC NEPHROPATHY**

**STRATEGY FOR THERAPY**

**EDITED BY**

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For Barry with admiration and respect for her marvelous ability to persist and prevail in the successful conduct of professional and personal life despite a handicap that would have stopped a less vital person.

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## PREFACE

Diabetic nephropathy is a tragic illness. Its often insidious onset in the insulin-dependent (type I) diabetic, typically a young adult, heralds the last act in the course of a disease that will increasingly become the dominant preoccupation in the patient's shortened life. For most type II diabetics, the beginning of clinical renal insufficiency is but a phase in a continuous deterioration that affects the integrity of job, marriage, and family.

The nephropathic diabetic is hypertensive, has worsening retinopathy, and more often than not, is also plagued by peripheral vascular insufficiency, heart disease, gastrointestinal malfunction, and deepening depression. Until the 1980's, few type I diabetics who became uremic (because of diabetic nephropathy) lived for more than two years. Hardly any attained true rehabilitation. This dismal prognosis is changing substantially for the better.

Research in diabetes has resulted in striking advances at both ends of the type I diabetic's natural history. In one exciting clinical trial now underway in London, Ontario, half of childhood diabetics treated with cyclosporine within six weeks of onset evince "permanent" disappearance of hyperglycemia and the need for insulin. At the other end of the natural history of diabetes for the nephropathic patient with worsening eye disease (renal-retinal syndrome), who receives a kidney transplant, patient and graft survival, two years after cadaveric kidney transplantation in type I diabetics is now equal to that of the nondiabetic.

It is widely appreciated that normalization of the blood glucose level and vigorous treatment of hypertension will retard the decline in renal reserve during

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## INTRODUCTION

ELI A. FRIEDMAN

During the past decade, uremic diabetics have increasingly been enrolled into long-term programs providing uremia therapy including peritoneal or hemodialysis, or kidney transplantation. Management of the uremic diabetic requires recognition and management of concurrent hypertension and retinal microvasculopathy. Formulating a successful treatment strategy for coincident failure of kidneys and eyes (and often limbs, heart, and central nervous system) poses a challenge to specialists who may be unaccustomed to working as components of a team. Forced to tolerate apparently unstoppable disintegration of multiple organs, the azotemic diabetic becomes desperate in, or (worse) detached from, the quest for a solution to his enormous medical, economic, and social problems. Although discomforted by gastropathy, peripheral vascular insufficiency, marginal cardiac compensation, motor and visceral neuropathy, and muscle wasting, it is most often the fear of impending blindness that induces the greatest despair and terror.

Uremic diabetics and their doctors have in the past interpreted loss of sight as a signal that death was imminent. The diabetic renal-retinal syndrome is defined as the coincident kidney and eye disease that results from microvasculopathy in retinal and glomerular arterioles and capillaries. Of uremic patients started on hemodialysis or peritoneal dialysis in 1983, in the United States, at least 25% developed renal failure because of diabetes. The majority of these patients manifested the renal-retinal syndrome.

The treated uremic diabetic, in fact, stands a reasonable chance of attaining at least several years of relatively comfortable life. Modern peritoneal dialysis,

hemodialysis, or kidney transplantation are returning a growing proportion of diabetics to work, home, or school activities. Functioning as a team, uremic diabetics and their doctors are engaged in an exciting clinical trial based on the premise that, as is generally accepted for nondiabetics, there is life after the onset of renal failure.

This book is based on the belief that rehabilitation is a realistic objective for diabetics whose kidneys have failed. Its pages contain an approach to the diabetic renal-retinal syndrome derived from several hundred type I uremic diabetics managed in Minneapolis, Brooklyn, and Toronto. Recognizing that strict control of blood glucose levels has not yet been shown to prevent or reverse progressive eye and kidney disease in humans, the authors will nevertheless advocate such tight regulation of the blood glucose level. It is reasoned that the risks of inducing a near-normal blood sugar impose a lesser hazard (should tight control subsequently prove of no benefit in preempting eye and kidney damage) than hyperglycemia (if the thesis that hyperglycemia is the major cause of vascular damage in diabetes is sustained). Normalizing high blood pressure at every stage of progressive diabetic renal disease is stressed as an important component of the therapeutic program. There is no doubt that a lower blood pressure is kinder to the eyes and kidneys—as well as to the brain and heart.

Exploration of the renal-retinal syndrome in this text will review its presentation, pathogenesis, and treatment. Emphasis is placed on the necessity for converting the patient into a partisan in the struggle to retain vision and limbs. Once uremia has developed, a strategy for selecting peritoneal dialysis, hemodialysis, or a kidney transplant will be proposed. Chapters by a kidney transplant recipient and a nurse caring for diabetic kidney transplant recipients focus on the patient as a sick human being demanding emotional as well as physical therapy. The main focus throughout this book will be on the patient and his/her reaction to a devastating illness.

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