NUTRITIONAL TREATMENT OF CHRONIC RENAL FAILURE

edited by

SERGIO GIOVANNETTI

CLINICA MEDICA I°,

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To the memory of Prof. Gabriele Monasterio

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LIST OF ABBREVIATIONS USED IN THIS BOOK

AA, amino acids
ACE, angiotensin converting enzyme
BW, body weight
CAPD, continuos ambulatory peritoneal dialysis
CLND, conventional low-nitrogen diet
CR, creatinine
CRcl, creatinine clearance
CRF, chronic renal failure
EAAs, essential amino acids
GFR, glomerular fittration rate
GN, glomerulonephritis
HBV, high biological value
HPTH, hyperparathyroidism
IN, interstitial nephritis
KAs, keto analogues of amino acids
LPD, low-protein diet
MHD, maintenance hemodialysis
PD, peritoneal dialysis
Pi, inorganic phosphorus
PKD, polycystic kidney disease
PR, protein
PTH, parathyroid hormone

RBF, renal blood flow
sCa, serum calcium
sCR, serum creatinine
SD, pure vegetarian supplemented diet
sPi, serum inorganic phosphorus
sUR, serum urea concentration
uCR, urinary creatinine
uPi, urinary inorganic phosphorus
UR, urea
uUR, urinary urea

Several other abbreviations are reported at the beginning of Chapter 3 and in other chapters.

PREFACE

Enormous progress has been made in the treatment of chronic renal failure over the last decades. Until the 1950s, chronic renal failure was considered to be an inexorably lethal condition. This is no longer the case. In addition, the disease, severe uremic syndrome, is now extremely rare, if existent at all, in industrialized countries.

Physicians of my generation who saw patients hospitalized with hemorraghes, pericarditis, severe anemia, cardiac failure, "malignant hypertension," pruritus, vomiting, generalized edema, and convulsions are particularly grateful for this progress.

I well remember seeing such patients hospitalized in the last days or weeks of their lives and also remember the sense of impotence I suffered for the complete lack of efficient measures I had at my disposal to manage their condition.

Nowadays, hemodialysis, peritoneal dialysis, and kidney transplantation allow patients with chronic renal failure to survive for very long periods of time in a satisfactory condition. Why then is there still a sense of dissatisfaction and why should we study dietary management? The drawbacks of dialysis and transplantation are the main reasons, but the certainty that dietary therapy is complementary to dialysis and even better than dialysis in certain conditions, is also very important.

Kidney transplantation is the best treatment for chronic renal failure at present, but the gap between the demand, which is continuosly increasing, for long survival times of dialyzed patients and the supply of organs for transplan-

tation, which is decreasing due to a reduction in the number of accidents, makes this therapy possible for only a few fortunate patients. Even without considering rejection and the other problems of transplantation, this problem of supply makes transplantation an unsatisfactory therapy.

Maintenance dialysis has the same drawback: Only a small percentage of the world's patients with chronic renal failure are dialyzed. Only in a few countries are facilities for hemodialysis available for all patients who need it; in most countries, peritoneal dialysis is not even regularly performed. Moreover, dialyzed patients are not without problems: Iatrogenic factors, together with hormonal and metabolic derangements of uremia, which are not corrected by dialysis, often create a new morbid condition after some years.

The answers to the question, Why dietary therapy? are clear: In the countries where dialysis is not performed dietary therapy may substitute replacement therapy until problems of fluid retention appear. In countries where dialysis is regularly performed, dietary therapy may prolong the predialysis period, may prevent the hormonal and metabolic derangements that usually appear in this stage, may make possible and safe reductions in the frequency of dialysis, and, finally, proper dietary manipulations specifically planned for patients on replacement therapy may prevent the appearance of the syndrome that often occurs in patients treated with dialysis for a long time.

Dietary treatment is then not necessarily an alternative to dialysis. It is an alternative when dialysis is not performed. When dialysis is performed, dietary treatment is of enormous help as a complementary therapy.

Several issues are discussed in this book, with the intent of either giving updated scientific experiences or removing prejudices and skeptical attitudes, which are an obstacle to the diffusion of dietary therapy. I am aware that removing prejudices is a difficult task, but I believe this attempt is my duty and I hope the goal will be achieved.

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