

Contents

Introduction	1
Aim of the Work	3
Malnutrition Inflammation Complex Syndrome	
• Introduction	4
• Malnutrition in ESRD	5
• overview	5
• Causes of PEM	5
• Assessment of Nutritional Status in Patients Undergoing Maintenance hemodialysis	7
• Inflammation in ESRD	16
• Overview	16
• Assessment of inflammation	18
• Markers of inflammation	18
• Relation between malnutrition and inflammation in ESRD	20
• CVD associated with ESRD	24
• Overview	24
• Vascular calcification in ESRD	24
• Risk Factors for CVD in ESRD	26
• Relation between malnutrition inflammatory complex and CVS	29
Phenomenon of reverse epidemiology in ESRD	
• Introduction	31
• History of reverse epidemiology	32
• Clinical outcome and reverse epidemiology	35
• Elements of reverse epidemiology	36

• Possible causes of paradoxical risk factors	42
• Body mass index and reverse epidemiology	
• introduction	43
• Imprecision of the BMI to Evaluate Obesity	46
• Body Size, Body Composition and Outcomes in Dialysis Patients	48
• Body Size, Body Composition and Cardiovascular Risk Fctors in cardiovascular Disease in Dialysis Patients	49
• Obesity and uremia	51
• Clinical effect of adipokines in uremic patients	52
• Review of Studies that Have Assessed the Association between BMI and Survival in PD Patients	55
• Reverse Epidemiology of Hypertension in the ESRD	
• Introduction	56
• The Association between Blood Pressure and Mortality in ESRD	56
• Observational studies on hypertension in ESRD	59
• Experimental Studies on hypertension in ESRD	62
• When Is BP Too High or Too Low?	65
• Reverse epidemiology of serum cholesterol in ESRD	
• Introduction	66
• Lipid abnormalities in Hemodialysis and Peritoneal Dialysis	66
• Dialysis and dyslipidemia in ESRD	70
• Cholesterol and mortality in ESRD Hypercholesterolemia paradox	71
• Factors affecting cholesterol paradox	72
• Metabolism of IDL and LDL in Hemodialysis Patients	74
• Kinetics of Lp(a) in Hemodialysis Patients	75
• Dyslipidemia or Hyperlipidemia	77
• Reverse Epidemiology of Plasma Total Homocysteine	
• Introduction	80
• Chronic Kidney Disease and Hyperhomocysteinemia	81
• Homocysteine induced Vascular Disease	84

• Association Studies between Hcy and Outcome in CKD	85
• Effect of lowering total Homocysteine on Cardiovascular Events	88
• Homocysteine and Mortality in ESRD	91
• Other possible examples of reverse epidemiology	
• Serum Creatinine	92
• Excess Parathyroid Hormone	94
• Serum Ferritin	95
Summary	96
References	99