

Cryoglobulinemia in Haemodialysis patients

Thesis

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Abstract

Key words: cryoglobulinaemia, hemodialysis, HCV, CRF

Summary

Cryoglobulins are immunoglobulins or immune complexes which precipitate at a temperature lower than 37°C and redissolve when rewarmed. Clinical features of cryoglobulinemia are in most cases cutaneous, renal, neurological or could be asymptomatic. Cryoglobulinemia can be also associated with malignant haematological disorder, connective tissue disease or infection process especially infection with hepatitis C virus. The prevalence of anti-HCV among dialysis patients varies in different countries (5-85%) worldwide, and may exceed 95% in the Middle East. Since the prevalence of HCV infection in patients on HD is reported to be very high, the incidence of MC is also expected to be high in this patient population.

Objective: The aim of this study is to evaluate the prevalence of cryoglobulinemia among patients with chronic renal failure undergoing regular haemodialysis.

Methods : In this study , forty patients with chronic renal failure receiving regular haemodialysis sessions (three sessions / week) regardless of their hepatitis C virus infection status(infected or not). The patients will be subdivided into 2 groups:- These patients were subjected to the following investigation :- S.BUN , s. creatinine , s. Na, s. K, ALT, AST, s. Ca ,s. Po4, s. albumin, test for cryoglobulin detection, hepatitis C virus antibodies, RF, INR, Platelets, Hb%

Results and conclusion: This study revealed incidence of cryoglobulinemia (**12.5%**) in patients on regular HD and the incidence of cryoglobulinemia in hepatitis C positive on regular HD was (**20%**) higher than in hepatitis C negative , it was only **5%** .RF activity positivity (40%) in HD cryopositive patients. The symptoms of cryoglobulinemia (purpura, arthralgia & generalized weakness) appear more frequently in cryoglobulin positive patients and hepatitis C positive patients. AST was found to be significant predictor for cryopositivity in HD patients.

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List of abbreviations

AID	Autoimmune disease
AITDS	Autoimmune thyroid disorders
ALT	Alanine aminotransferase
AMA	Antimitochondrial antibodies
ANA	Antinuclear antibodies
ANCA	Anti-Neutrophil Cytoplasmic Antibodies
Anti-dsDNA	Anti double strand DNA
Anti-ENA	Anti-extractable nuclear antigen antibodies
Anti-GOR	Nuclear antigen named GOR
Anti-HCV	Antibodies against hepatitis C
Anti-Rib-P	Anti ribosomal p
Anti-SSA	Anti-Ro antibodies
APL	Antiphospholipid
APS	Antiphospholipid syndrome
ASMA	Anti Smooth muscle antibodies
AST	Aspartate aminotransferase
BCR	B cell receptor
B-CLL	B-cell chronic lymphocytic leukemia
B-DNA	Branched chain DNA
BUN	Blood urea nitrogen
C3a, C5a	Complement fragments
CAPD	Continuous ambulatory peritoneal dialysis
CBC	Complete blood count
CCP	Anti-Cyclic citrullinated peptide

List of abbreviations

CCPD	Continuous cyclic peritoneal dialysis
CD4	Cluster of differentiation4
CD8	Cluster of differentiation 8
CD81	Cluster of differentiation 81
Cg	Cryoglobulinaemia
CHC	Chronic hepatitis C
CLD	Chronic liver disease
CNS	Central nervous system
CPX	Cyclophosphamide
Cryo +Ve	Cryoglobulin +ve
Cryo -Ve	Cryoglobulin –ve
CS	Corticosteroids
CT	Computed tomography
CTLs	Cytotoxic T-Lymphocytes
DC	Dendritic cells
DCM	Dilated cardiomyopathy
DM	Diabetes Mellitus
DR	MHC class 2 molecules found on B cells and antigen presenting cells of human
EIAs	Enzyme Immunosorbant assay
EI	Envelop l protein
EHM	Extrahepatic manifestations
ELISA	Enzyme linked immunosorbant assay
EM	Erythema multiforme
EMC	Essential mixed cryoglobulinaemia
EMG	Electromyography

List of abbreviations

ESRD	End stage renal disease
FDA	Food and drug administration approvals
FF	Fisk fatigue severity scale
FM	Fibromyalgia
FS	Fibromyalgia syndrome
GI	Gasterointestinal
HALT	Hepatitis C antiviral long-term treatment against cirrhosis
Hb	Hemoglobin
HBsAg	Hepatitis-B surface antigen
HBV	Hepatitis B virus
HCC	Hepatocellular carcinoma
HCcAg	Hepatitis C core antigen
HCM	Hypertrophic cardiomyopathy
HCV	Hepatitis C virus
HCVrA	Hepatitis C related arthritis
HCV-TP	Hepatitis C virus Thrombocytopenia
HGV	Hepatitis G virus
HD	Hemodialysis
HIV	Human immunodeficiency virus
HLA	Human leukocyte antigen
HVR	Hypervariable region
Ic	Immunocytoma
IFG	Impaired fasting glucose
IgG	Immunoglobulin-G
IgM	Immunoglobulin-M
IL	Interleukin

List of abbreviations

IND	Indeterminante
INF	Interferon
INR	International normalizing ratio
IPF	Idiopathic pulmonary fibrosis
IR	Insulin receptor
IRSI	Insulin receptor substrate-1
ITP	Immune thrombocytopenic purpura
LAC	Low-antigen-content
LKM1	Liver Kidney microsomal antibodies
LP	Lichen planus
LP-NHLs	Lymphoplasmacytoid-Non Hodgkin lymphoma
MALT	Mucosal associated lymphoid tumor
MC	Mixed cryoglobulinaemia
MGN	Membranous glomerulonephropathy
MHC	Major Histocompatibility complex
MLDUS:	Monotypic lymphoproliferative disorder of undetermined significance
MM	Multiple mononeuropathy
MN	Membranous nephropathy
MPGN	Membranoproliferative GN
<i>MRF</i>	Monoclonal rheumatoid factor
NHL	Non-Hodgkin's lymphoma
NIH	National institute of health
NK	Natural killer
NOSAS	Non-organ-specific autoantibodies
NSAIDS	Nonsteroidal anti-inflammatory drugs

List of abbreviations

PAIgG	Platelet-associated immunoglobulin
PAN	Polyarteritis nodosa.
PCR	Polymerase chain reaction
PCT	Porphyria cutanea tarda
PE	plasma exchange
PEG-INF	Pegylated interferon
PKR	Protein-kinase
PLT	Platelets
PN	Peripheral neuropathy
pSS	primary Sjögren's syndrome
PUVA	Psorian ultraviolet rays type-A
RA	Rheumatoid arthritis
RB	Ribavirin
RF	Rheumatoid factor
RIBA	Recombinant immunoblot assay
RT	Renal transplantation
RTX	Rituximab
S	Significance
S.D	Standard deviation
s. Alb.	Serum albumin
s.Ca	Serum calcium
s.Cr	Serum creatinine
s.K	Serum potassium
s.Na	Serum sodium
s.P.	Serum phosphorus
SBE	Subacute bacterial endocarditis

List of abbreviations

Serum po4	Serum phosphate
SLE	Systemic lupus erythrematosus
SS	Sjogren syndrome
SSRIs	Selective serotonin reuptake inhibitors
SVR	Sustained virologic response
T2DM	Type 2 diabetes mellitus
TH-cells	T-helper cells
TLRS	Toll-likar receptors
TNF	Tumor necrotic factor
TPO	Thrombopoietin
VCAM-1	Vascular cell adhesion molecule-1.
URO-D	Uroporphyrinoger decarboxylase-D
US	Ultrasonography
WM	Waldenstrom's macroglobulinemia

INTRODUCTION