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ST VINCENT'S PATHOLOGY

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GENERAL SERUM PROTEINS AND IMMUNOGLOBULINS INFORMATION SHEET

TEST	INDICATION	INTERPRETATION
SERUM PROTEIN EPG	• High ESR • Lymphoma, myeloma or lymphocytic leukaemia • Acute or chronic inflammatory disease • Liver and renal disease • Monitor paraprotein levels	• Monoclonal paraprotein band may be benign or associated with myelom, CLL or lymphoma • Raised gamma, polyclonal - inflammatory disease • Low gamma (immunoglobulins) - hypogammaglobulinaemia • Beta-gamma bridge - alcoholic liver disease • Typical patterns in liver, renal or GI disease • Low albumin - liver, renal, and GI disease and protein deficiency state and some malignancies • Low alpha 1 - Antitrypsin deficiency • High alpha 1 - Inflammatory disease • Raised alpha 2 - elevated acute phase response
SERUM IF	• Confirmation of monoclonal origin of band on EPG • Identification and categorisation of paraprotein	• Small paraproteins (<8g/L) are common especially with increasing age and in chronic inflammation • Malignant paraprotein suggested by high concentration (>10 g/L), suppression of normal Ig's or Bence-Jones protein
URINE PROTEIN EPG	• Renal disease • Low serum albumin • Paraproteinaemia/myeloma	• Distinguishes selective from non-selective proteinuria • Monoclonal free light chains (Bence Jones protein) in Myeloma • Free Lambda chains associated with amyloid
URINE IF	• Categorisation of Bence Jones and urine paraprotein	• Identification of urine paraprotein • Free Bence Jones light chains in urine usually associated with myeloma

SERUM IMMUNO-GLOBULINS	• High ESR • Recurrent infections • Paraproteinaemia • Suspected chronic inflammatory disease • Chronic renal or liver diseases	• Low immunoglobulins - suggests renal or GI protein loss • Selective or diffuse decrease in primary or secondary immune deficiency • Selective increase - possible paraproteinaemia • Polyclonal increase in many inflammatory conditions • In liver disease raised: IgG - chronic active hepatitis IgA - alcoholic liver disease IgM - primary biliary cirrhosis
SERUM B2 MICROGLOBULIN	• Renal disease • Monitor immune malignancy, eg myeloma, lymphoma	• Increased with reduced glomerular filtration • Correlates with myeloma disease activity • Indicates risk of HIV progression to AIDS
SERUM CAERULO-PLASMIN	• Liver disease	• Low - Wilson's Disease • Raised - inflammatory disease (especially liver) in pregnancy and patient's on oral contraceptives
CRYOPROTEINS	• Raynaud's phenomenon and vasculitis	• Cryoproteins are usually of clinical significance as aetiological factors
CRYOGLOBULINS	• Abnormal serum proteins, especially paraproteinaemia	• May be associated with oral contraceptives
CSF EPG	• Routine examination of CSF • Diagnosis of M.S.	• Oligoclonal immunoglobulin in intracranial inflammatory disease eg M.S. • High IgG/albumin ratio characteristic of M.S.