NutriPATH PATHOLOGY · PATIENT REPORT
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26117-0056

Dr Test Doctor (Test Doctor) Test Clinic. 123 Test Street, Test Suburb Victoria 3125

Lab ID
Patient ID P000060
Ext ID 26117-0056

Test Patient

Sex: Female • 56yrs • 01-Jan-70
123 Home Street, Test Suburb VIC 3125

RECEIVED
27-Apr-26

BIOTOXINS-Initial Assessment

	Collected
Specimen type - Blood-EDTA	15-Apr-26
Specimen type - Blood-Serum	15-Apr-26

TEST	RESULT	H/L	REFERENCE	UNITS
Complement C3a	749		(20-940)	ng/mL
Complement C4a	4509	H	(20-2830)	ng/mL
TGF Beta-1	3882	H	(20-2380)	pg/ml
Vascular Endothelial Growth Factor (VEGF)	28	L	(31-68)	pg/ml
Matrix Metallopeptidase 9	409	H	(88-332)	ng/mL

BIOTOXINS COMMENT

ELEVATED C4a LEVEL:

C4a has become the inflammatory marker of greatest significance when looking at innate immune responses in those with exposure to Water Damaged Buildings (WDB). The complement system is a group of proteins that move freely through the bloodstream, playing a role in the development of inflammation. Complements activate inflammatory responses, with spillover effect from the innate immune response to the acquired immune response and hematologic parameters. These short-lived products are re-manufactured rapidly, such that an initial rise of plasma levels is seen within 12 hours of exposure to biotoxins, and sustained elevation is seen until definitive therapy is initiated. C4a levels rise rapidly and represent an excessive response to moulds/biotoxin presence. By C4a activating mast cells and basophils, increasing smooth muscle contraction (in blood vessels and intestines), leads to increased vascular permeability and mitochondrial dysfunction. The elevated C4a levels cause a decreased blood flow into the small vessels called capillaries, which impacts the brain causing decrease in the patient's cognitive ability. Thereafter the manifestation of common CIRS symptoms like breathing difficulty, fatigue, and dysfunction in thinking and memory processes (cognitive ability) arise. Elevated C4a levels are also seen in Lupus and Tick-Borne Disease. Elevated C4a levels may be corrected through use of VIP (Vasoactive Intestinal Peptide) Spray.

ELEVATED TGFBeta-1 LEVEL:

TGF beta-1 is a molecule that plays an important role in controlling the innate immune pathways of the immune system by producing or suppressing inflammation. Elevated levels of TGF beta-1 indicate the occurrence of a current overactive immune response. Elevated levels of TGF beta-1 damage normal T-regulatory cell functions that control or prevent autoimmunity, leaving the person at risk for autoimmune-related illness. TGF Beta-1 is a protein that has important regulatory effects throughout innate immune pathways. This protein helps control the growth and division (proliferation) of cells, the process by which cells mature to carry out specific functions (differentiation), cell movement (motility), and the self-destruction of cells (apoptosis). The TGF Beta-1 protein plays a role in development before birth, the formation of blood vessels, the regulation of muscle tissue and body fat development, wound healing, and immune system function (especially regulatory T-cells). Elevations of TGF Beta-1 give rise to symptoms of GIT dysfunction, lung tissue fibrosis, and neurological conditions (tremors, seizures, Parkinsons-like symptoms). Elevated TGF Beta-1 may be corrected through use of angiotensin II blockers or if not tolerated, VIP (Vasoactive Intestinal Peptide) spray may be used.

ELEVATED MMP-9 LEVEL:

Matrix metallopeptidase 9 (MMP-9) is an innate immune system activity marker. MMP-9 is involved in the breakdown of extracellular matrix in normal physiological processes, such as embryonic development, reproduction, and tissue remodeling, as well as in disease processes. In CIRS, cytokines trigger white blood cells to release MMP-9 into the bloodstream, leading to increased vascular permeability through breakdown of cell membranes in the blood vessel walls. This results in delivery of inflammatory elements into sub-intimal spaces and from here, further delivery into solid organs (brain, lung, muscle, peripheral nerve and joint) is initiated, thus increasing clot formation and arterial blockage. Elevated cytokines levels generate flu-like symptoms (Headache, muscle aches, fatigue, unstable body temperature, difficulty concentrating. Elevated MMP-9 may be corrected using fish oils and a low amylose diet.

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LOW VEGF LEVEL:

Vascular endothelial growth factor (VEGF) is a protein produced by cells that stimulates growth of new blood vessels in order to supply oxygen to the tissues when blood circulation is inadequate. In CIRS, deficiency of VEGF (through VEGF suppression due to high cytokine levels) is quite common and is a serious problem that must be corrected. With a reduced blood flow to the tissues and reduced supply of oxygen to the cells, they begin to starve and not function properly. Reduced VEGF levels lead to fatigue/muscle cramps, shortness of breath. Low VEGF levels may be corrected through use of fish oils and a low amylose diet.

Methodology

Radioimmunoassay (RIA), Enzyme-Linked Immunosorbent Assay (ELISA)