Cardiovascular and Vascular Abnormalities

The ICC 2011 identifies cardiovascular and vascular abnormalities as important features of Myalgic Encephalomyelitis, reflecting dysfunction of blood flow regulation and the autonomic nervous system. Many people with M.E. experience orthostatic intolerance, where standing upright causes symptoms such as dizziness, weakness, palpitations, breathlessness, visual disturbances, or faintness due to impaired circulation and reduced blood flow to the brain. Conditions such as POTS and neurally mediated hypotension commonly overlap with M.E. Abnormal vascular regulation may also contribute to cold extremities, temperature dysregulation, headaches, chest discomfort, and hypoperfusion — reduced delivery of oxygen and nutrients to tissues and organs. These cardiovascular abnormalities can significantly worsen fatigue, cognitive dysfunction, and post-exertional symptom exacerbation.

Cardiovascular and vascular abnormalities in Myalgic Encephalomyelitis (ME), particularly within the framework of the International Consensus Criteria (ICC), center on functional impairment rather than structural heart disease. These issues involve impaired blood flow regulation, reduced blood volume, and dysfunction in the autonomic nervous system.

Core Vascular Abnormalities (MEICC)

*Orthostatic Intolerance (OI): A hallmark feature, including Postural Orthostatic Tachycardia Syndrome (POTS) and Neurally Mediated Hypotension (NMH), leading to dizziness, lightheadedness, and tachycardia upon standing.

*Reduced Blood Volume (Hypovolemia): Low circulating blood volume is common, restricting oxygen delivery to muscles and the brain.

*Impaired Peripheral Circulation: Poor blood distribution leads to cold hands/feet and mottled skin.

*Endothelial Dysfunction: Abnormal regulation of blood vessel dilation and constriction is linked to oxidative stress and inflammation.

*Reduced Cerebral Blood Flow: Decreased blood flow to the brain, particularly when upright, is a major contributor to cognitive dysfunction or "brain fog".

Cardiac Function Findings

While the heart muscle often appears structurally normal, studies show functional abnormalities:

*Reduced Cardiac Output/Stroke Volume: A "small heart" phenomenon has been noted, where the left ventricle is smaller, resulting in reduced blood pumped per beat.

*Diastolic Dysfunction: Impaired heart relaxation limits filling, reducing overall output.

*Reduced Aerobic Capacity: Inability to increase cardiac output adequately during exertion.

Exertion Intolerance

Post-Exertional Neuroimmune Exhaustion (PENE), or crash, is often accompanied by "post-exertional circulatory dysfunction":

* Blood flow regulation worsens after minor activity.

* Increased lactate production occurs due to poor oxygen delivery, worsening fatigue.

* Cardiovascular stress is disproportionate to the amount of effort.

These cardiovascular issues are part of a broader, systemic failure in regulation, not simply "fatigue," and are often documented through specialized testing like tilt-table tests and echocardiography (for preload assessment).

References

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