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BLOOD REDOX STATUS IN DIFFERENT HUMAN PATHOLOGIES

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The *in vivo* determination of oxidative stress always remains a great challenge. Our approach in Liège CHU consists of simultaneously measuring in blood samples four different kinds of biomarkers: enzymatic and non-enzymatic antioxidants, trace elements, markers of oxidative damage to lipids, and identification of sources leading to increased reactive oxygen species (ROS) production. All these biomarkers (n = 16) have been investigated in patients: 1) with Abdominal Aortic Aneurysm (AAA)[1] or operated for Thoracic Abdominal Dissection (TAD)[2], 2) suffering from Chronic Obstructive Pulmonary Disease (COPD)[3] or FacioScapuloHumeral Myopathy (FSHM)[4], 3) with COVID-19[5,6] and 4) with delirium[7]. When compared to our internal reference values, depletion in non-enzymatic antioxidants (vitamin C, β-carotene, vitamin C/vitamin E ratio, thiol proteins) and trace elements (zinc, selenium) was observed in the majority of these pathologies. By contrast, increased levels in glutathione peroxidase, copper/zinc ratio, lipid peroxides (ROOH), and myeloperoxidase are common in all these diseases.

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