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Significance of markers of monocyte activation and inflammation in patients with Alcohol Use Disorder

Alcohol Use Disorder (AUD) is the most extreme form of unhealthy alcohol use. It is associated with liver-related problems, among other alterations. A study carried out by the Addiction Unit of the Internal Medicine service of the Germans Trias i Pujol University Hospital with patients from this and Bellvitge, proposes to reach a correlation of indications in order to act before the disease worsens. It has been considered important to analize the CD163 and sCD14 proteins, markers for activation and monocyte behavior and the IL-6, responsible of the inflammation of the body, due to alcohol intake, because both of them are linked to the observed perturbations.

Alcohol Use Disorder (AUD) is associated with medical complications and death, with a special impact in young adults. Liver disease is the most frequent alcohol-related medical illness, although only a minority of heavy drinkers develops alcohol-related liver disease. Therefore, it is necessary to identify those patients with AUD at higher risk of premature complications.

The mechanisms of alcohol-related organ damage include oxidative stress, chronic

inflammation, monocyte activation and increased intestinal permeability. Alcohol also produces changes in the intestinal microbiome, increasing the proportion of gram negative bacteria and funghi, as well as an increased translocation of bacterial products [such as lipopolysaccharide (LPS) or endotoxin] from the intestine to the blood flow. Those bacterial products activate Kupffer cells that develop an inflammatory cascade that causes progressive scarring of the liver (also known as fibrosis), cirrhosis of the liver and liver cancer.

The study “Significance of Markers of Monocyte Activation (CD163 and sCD14) and Inflammation (IL-6) in Patients Admitted for Alcohol Use Disorder Treatment” aimed to analyze the associations between different clinical and laboratory variables and plasma levels from markers of monocyte activation (CD163 and sCD14) and inflammation ([IL] -6) in patients with AUD admitted to the hospital for detoxification. We analyzed 289 patients admitted at the Germans Trias i Pujol University Hospital and the Bellvitge Universtari Hospital between 2013 and 2018. 77% were male, the median age was 50 years, the alcohol consumption upon admission was 142g per day, and the duration of AUD was 20 years.

We observed the levels of glucose, bilirubin, AST (liver enzyme), hemoglobin and hepatitis C virus infection were associated with higher levels of CD163, consistent with monocyte activation. The levels of glucose, AST, triglycerides and C-reactive protein (CRP)> 5mg / L were associated with higher levels of sCD14, also consistent with higher monocyte activation. Alcohol consumption upon admission, corpuscular volume, total cholesterol and CRP value> 5mg / L were associated with higher levels of IL-6, consistent with systemic inflammation. These results indicate that monocyte activation and systemic inflammation are associated with laboratory abnormalities that suggest liver disease, often subclinical, that could help us identify those patients at higher risk of serious complications.

We aim that with continued research on this topic we will we able to obtain targeted treatment tools. It should be noted that a reduction in alcohol consumption and sustained abstinence could prevent the progression of liver disease and the occurrence of complications.

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References

García-Calvo X, Bolao F, Sanvisens A, Zuluaga P, Tor J, Muga R, Fuster D. **Significance of markers of monocyte activation (CD163 and sCD14), and inflammation (IL-6) in patients admitted for alcohol use disorder treatment**. *Alcoholism: Clinical & Experimental Research*. 2019 Nov 5. doi: 10.1111/acer.14228. https://onlinelibrary.wiley.com/doi/full/10.1111/acer.14228

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