

# ALCOHOL USE DISORDER AND CIRCULATING CYTOKINES: A SYSTEMATIC REVIEW

Claire Adams<sup>1</sup>, Joanne Lewohl<sup>2</sup>, Kirsten Morley<sup>1</sup>

<sup>1</sup>*Discipline of Addiction Medicine, Sydney Medical School, The University of Sydney, Sydney, NSW,* <sup>2</sup>*School of Medical Sciences, Griffith University, Gold Coast, QLD,*

claire.adams@sydney.edu.au

**Introduction and Aims:** There has been emerging interest in the role of the immune system in the pathophysiology of alcohol use disorder (AUD) given alcohol consumption stimulates immune cells to secrete peripheral pro- and anti-inflammatory cytokines. We aimed to carry out a systematic review to assess the available literature to determine whether an abnormal inflammatory cytokine profile exists in AUD patients compared to controls and whether cytokine levels were correlated with drinking variables.

**Design and Methods:** Using the PRISMA-P guidelines, a comprehensive search of electronic databases was conducted, for AUD related-terms in combination with cytokine-related terms (PROSPERO: CRD42019123280). Patients had to meet established criteria for AUD and be compared with healthy controls. Papers retrieved were assessed for inclusionary criteria and a critical appraisal was completed using the Newcastle-Ottawa Scale.

**Results:** Twenty-two papers met the inclusionary criteria. Thirty serum or plasma cytokines were measured without immune stimulation. AUD patients had significantly elevated concentrations of IL-6, IL-8, and TNF- $\alpha$  in 41%, 32% and 27% of all studies respectively. IL-6 and IL-10 were both correlated with increased craving in 3 out of 22 studies. Additional cytokines were present in abnormal concentrations in the majority of studies, although insufficient data was available for some cytokines.

## **Discussions and Conclusions:**

There is sufficient evidence to support the presence of an abnormal circulating cytokine profile for IL-6, IL-8, and TNF- $\alpha$  in AUD, which needs further exploration.

**Disclosure of Interest Statement:** *This study was supported by the University of Sydney Brown Prize (KM).*