

## S38-03 - CIRCADIAN RHYTHMICITY, ADHD AND ADDICTION

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**Introduction:** Attention-deficit hyperactivity disorder (ADHD), specifically in adult patients, is often associated with a plethora of comorbid conditions including substance use and addiction. Interestingly, for both conditions alterations of circadian rhythmicity have been described and variants in so-called CLOCK genes been implicated in their pathophysiology.

**Objectives, aims and methods:** In order to further clarify the role of CLOCK genes in these conditions, genotyping and quantitative reverse-transcriptase PCR were used to detect possible associations with CLOCK gene variants (polymorphisms) and possibly altered expression patterns of the gene products.

**Results:** Preliminary data suggest that certain CLOCK gene variants might be associated with both adult ADHD and addiction. Additionally, the circadian gene expression pattern in patients seems to significantly differ from that of controls.

**Conclusions:** Alterations of CLOCK systems - on the DNA as well as the RNA level - might be a common pathophysiological phenomenon of ADHD and addiction, and represent the molecular basis for fundamental changes in circadian rhythmicity often observed on the clinical level. This may have far-reaching prognostic and therapeutic consequences.