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**HAIR CORTISOL ANALYSIS IN PATIENTS WITH BIPOLAR DISORDER: TOWARDS A NEW ENDOPHENOTYPE?**

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**Introduction:** Dysregulation of the hypothalamic-pituitary-adrenal (HPA-)axis is hypothesized to play a role in the pathogenesis of bipolar disorder (BD). Conflicting results have been reported when saliva or serum was used to measure cortisol levels. A recently developed method is to measure cortisol in scalp hair, with one cm of scalp hair representing one month. We studied whether there are differences in long-term hair cortisol levels between BD patients and healthy individuals and whether there are associations between hair cortisol, life events and disease characteristics.

**Methods:** Hair samples were collected in 100 BD patients and 195 healthy controls. Long-term cortisol levels were determined in 3 cm hair segments. Saliva samples were collected on two consecutive evenings. Documented disease characteristics were disease state, age of onset, psychiatric co-morbidity, and life events.

**Results:** Hair cortisol levels were not statistically different in BD patients compared to healthy controls ( $p=0.233$ ) and were not associated with the disease state at the moment of sample collection ( $p=0.978$ ). Clinical characteristics, such as age of onset  $\geq 30$  years ( $p=0.004$ ) and psychiatric co-morbidity (44.87 versus 31.41 pg/mg hair;  $p=.021$ ), appeared to associate with higher hair cortisol levels. Panic disorder associated with decreased cortisol levels (22.13 versus 34.67 pg/mg hair;  $p=0.019$ ). The occurrence of recent negative major life events, but not of positive major life events, was associated with an increase in HCC in BD patients.