PW01-12 - **TWO OR THREE AGE-OF-ONSET GROUPS IN BIPOLAR I DISORDER? FINDINGS OF COMMINGLING ANALYSIS IN ROMANIAN AND GERMAN BIPOLAR I PATIENTS**

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**Background:** Age-of-onset (AO) seems to be a phenotypic variable with a strong genetic component and therefore useful in molecular analysis of bipolar disorder (BP). A debate about the cut-off point for defining early AO has developed over the last few years. Using an Expectation-Maximization algorithm Bellivier et al. (2001) found the best fit for a model with three onset-groups, proposing the age 20-21 as cut-off for early onset, while using the same algorithm Kennedy et al. (2005) found the best fit for a two onset-group model with age 40 as cut-off with an incidence peak for mania in the age-band 21-25. Based on segregation analysis, we proposed a two AO-group model with cut-off age 25 for early onset (Grigoroiu-Serbanescu et al. 2001). The present study **aimed at** investigating the best AO-model in 500 Romanian BPI and 1458 German BPI patients using commingling analysis (SAGEv6.01-software) (Elston et al, 2009). The best model was selected according to Akaike's Information Criterion (AIC).

**Results:** The two AO-group and three AO-group models provided similar AIC-values both in the Romanian and the German sample. The Romanian early-onset group (40% cases) had means around 18 years, SDs=6-7, while in the German early-onset group the mean AO was around 20 years (SDs=9-11) (50% cases). Thus the cut-off for early-onset (X +1SD) was different.

**Conclusion:** Our results overlapped with the findings of Kennedy et al (2005) showing that two-curve and three-curve AO mixtures similarly fit the AO-distribution in BPI disorder and the cut-offs for early-onset differ by sample.

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