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## Understanding impulsivity in depression; Which is the role of prenatal androgens?

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**Introduction:** Impulsivity, “a predisposition toward rapid, unplanned reactions to internal or external stimuli, without regard to the negative consequences”, is related to affective disorders. Androgens play a crucial role during brain development; prenatal androgens’ exposure and responsiveness have been cited as predictors of second to fourth (2D:4D) digit ratio. Androgen activity and male gender are associated with violence, aggression and impulsivity; suicide is an extreme form of self-aggression.

**Objectives:** The purpose of this study was to examine if prenatal androgens’ exposure affects impulsiveness in men with unipolar depression.

**Methods:** The sample frame consisted of 59 men 30-50 y.o. diagnosed with unipolar depression (ICD-10 diagnosis), in a remission phase.

Participants completed the Hamilton Depression Rating Scale (HAM-D), the Montgomery-Asberg Depression Scale (MADRS) and the Barratt Impulsiveness Scale (BIS-11). We measured 2D:4D ratio using Digital Vernier Calipers. Participants were divided into three subgroups, according to their 2D:4D. Comparisons were made amongst those with ratio  $\leq 0.94$  and those with ratio  $\geq 0.96$ .

**Results:** Lower 2D:4D ratio to participants, which indicates high levels of prenatal testosterone exposure, was associated with higher BIS-11 scores, especially in the two subtraits of impulsiveness; Non-planning and Attentional. The subgroup with 2D:4D  $\leq 0.94$  had BIS total =74.85, whereas the subgroup with 2D:4D  $\geq 0.96$  had BIS total= 65.23 (statistically significant difference).

**Conclusions:** Prenatal androgens’ exposure play a crucial role in the impulsiveness of men with depression; higher exposure to androgens predicts higher impulsiveness, therefore higher suicide risk. Clinical practice could benefit from the predictive value of impulsivity.

**BIS SCORE IN CORRELATION TO 2D:4D DIGIT RATIO**

