**Changes in laboratory results in transgender individuals on hormone therapy - a retrospective study and practical approach**

**Objective:**Interpreting laboratory results for transgender individuals who started hormone therapy requires careful consideration, specifically for analytes that have sex-specific reference intervals. In literature, conflicting data exist on the effect of hormone therapy on laboratory parameters. By studying a large cohort, we aim to define what reference category (male or female) is most appropriate to use for the transgender population over the course of gender-affirming therapy.

**Methods:**A total of 2201 people (1178 transgender women and 1023 transgender men) were included in this study. We analyzed hemoglobin (Hb), hematocrit (Ht), alanine aminotransferase (ALT), aspartate aminotransferase (AST), alkaline phosphatase (ALP), gamma-glutamyltransferase (GGT), creatinine, and prolactin, at three different time points: pretreatment, during hormone therapy, and after gonadectomy.

**Results:**For transgender women, Hb and Ht levels decrease after initiation of hormone therapy. The concentration of liver enzymes ALT, AST, and ALP decrease whereas the levels of GGT do not change statistically significantly. Creatinine levels decrease whereas prolactin levels rise in transgender women during gender-affirming therapy. For transgender men Hb and Ht values increase after starting hormone therapy. Liver enzymes and creatinine levels increase statistically significant as well upon hormone therapy while prolactin concentrations decrease. Overall, reference intervals in transgender people after 1 year on hormone therapy resembled those of their affirmed gender.

**Conclusions:**Generating transgender-specific reference intervals is not essential to correctly interpret laboratory results. As a practical approach, we recommend to use the reference intervals of the affirmed gender from 1 year onwards after starting hormone therapy.

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