Increased ambulatory blood pressure in adolescents with gender dysphoria treated with gonadotropin-releasing hormone analogues

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Background
• Adolescents with gender dysphoria (GD) are treated with gonadotropin-releasing hormone analogues (GnRHa) to prevent the development of characteristics of the undesired sex.
• Subsequently, sex steroids of the desired sex, cross sex hormones (CSH) are added.
• We reported on the development of hypertension during GnRHa monotherapy1.

Objective
• to prospectively study blood pressure (BP) development during GnRHa treatment in adolescents with GD.

Methods
• BP was measured using 24 hour ambulatory BP monitoring:
  • prior to start of GnRHa (D0)
  • during GnRHa (D12)
• Mean diurnal and nocturnal BP were converted to SDS according to natal sex, height

Results

• nocturnal systolic (SBP) and diastolic (DBP) BP increased in natal girls but not in natal boys

Discussion
• The findings are consistent with previous reports in adult patients that women are more susceptible for BP elevation during GnRHa treatment2 than men3.
• This may be due to loss of the protective effect of estrogens
  • in women after menopause BP increases
  • estrogen restored triptorelin induced decreased venous wall distensibility in female rats4.
• Clinical implications still need to be assessed
  • CSH in natal girls are androgens which also have BP elevating properties4.

Conclusion
• GnRHa therapy can increase nocturnal BP.
• natal girls (transboys) appear to be more at risk.
• clinical relevance (e.g. increased cardiovascular risk) is still unclear.

References
1Klink et al., Int J Endocrinol Metab, 2015
2Bonfirraro et al., Minerva Ginecol, 1995
3Levine et al., Circulation, 2010
4Varbiro et al, Menopause, 2002