

# THE EFFECT OF 17 $\beta$ -ESTRADIOL ON UTERINE VOLUME IN YOUNG WOMEN WITH TURNER SYNDROME – A 5 YEAR RANDOMIZED CONTROLLED CLINICAL TRIAL



- a part of Copenhagen University Hospital

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## INTRODUCTION

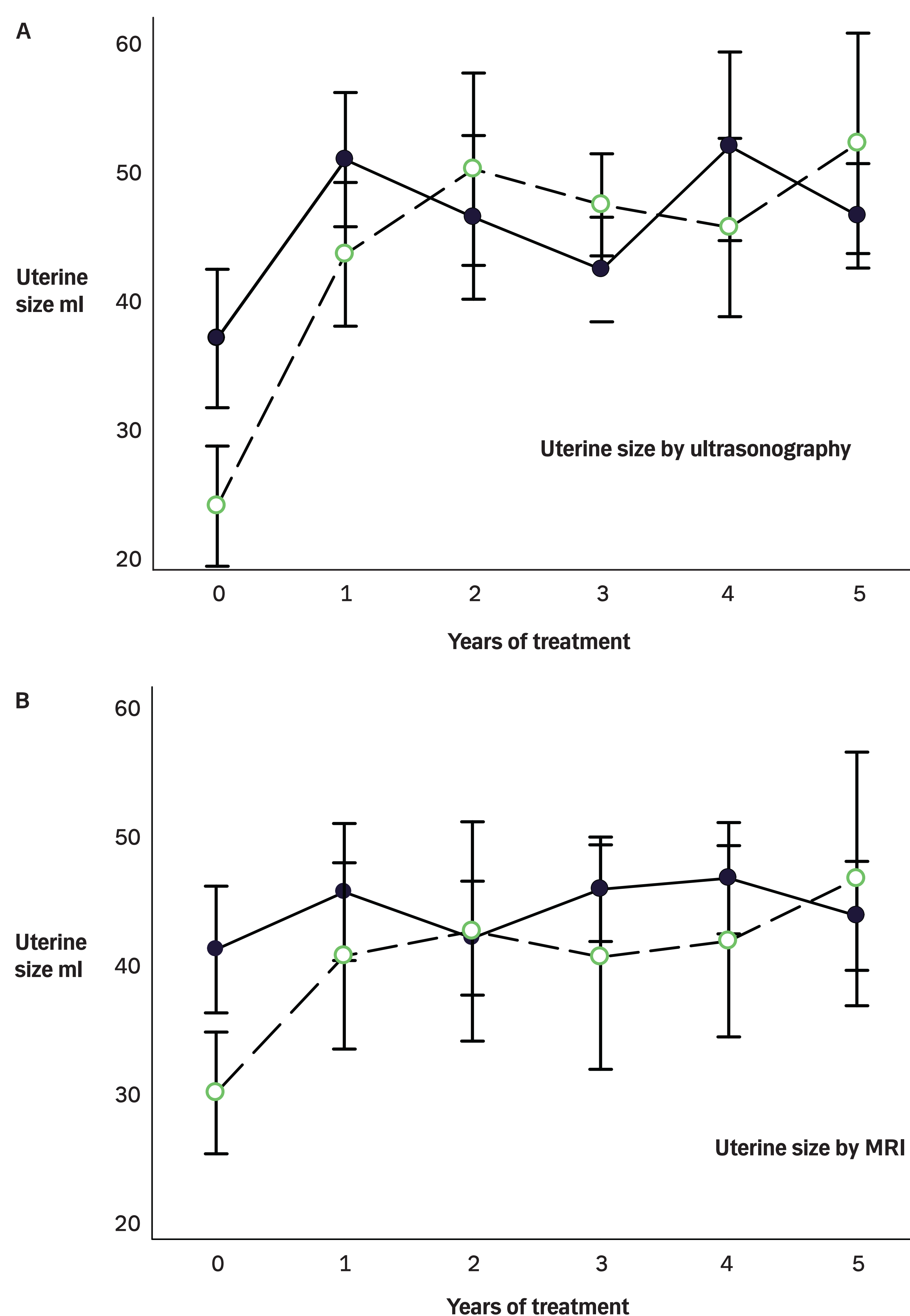
The majority of Turner syndrome (TS) girls need exogenous estrogen treatment to induce puberty and normal uterine growth. After induction of puberty the optimal estrogen treatment protocol has not been determined. We compared the effect of 2 different dosing regimens of oral 17 $\beta$ -estradiol on uterine size.

## METHODS AND DESIGN

A double-blind 5 year randomized controlled clinical trial. The lower-dose group (LD group) took 2 mg 17 $\beta$ -estradiol/day orally and placebo. The higher-dose group (HD group) took 2+2 mg 17 $\beta$ -estradiol/day orally. 20 young TS women (19.2 $\pm$ 2.5 years, range 16.0-24.9) participated. The uterus was investigated by transabdominal ultrasound (US) and magnetic resonance imaging (MRI) at baseline and yearly thereafter.

## RESULTS

A steep increase in uterine volume within the first years of treatment was seen in the HD group by US and MRI. In the LD group a less steep increase in uterine volume was seen by US. In the LD group the uterine volume remained statistically unchanged from baseline and throughout the follow up period by MRI. The uterine volume remained stable in the subsequent years in both groups and at the last visit there were no statistical significant differences in uterine volume between the two groups (US: LD-group vs. HD-group: 46.6  $\pm$  13.0 vs. 52.2  $\pm$  21.0 ml, P=0.5), (MRI: LD-group vs. HD-group: 44.2  $\pm$  13.4 vs. 47.1  $\pm$  22.1 ml, P=0.8)



Uterine size by US (figure A) and by MRI (figure B) in the HD group (●) and LD group (○)

## CONCLUSION

High dose oral 17 $\beta$ -estradiol induces a steeper increase in uterine volume in young TS women within the first years of treatment compared to the lower dose. However, the uterine growth potential seems to be the same in most young TS women making the duration of treatment equally significant as estrogen dose