## AB041. Anti-Lysyl oxidase combined with vacuum aspiration induce penile lengthening by tunica albuginea remodeling

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**Background:** The penile length is from the pubis to the end of glan of the stretched penis, which is mainly defined by the dimension of cavernous body. Micropenis is generally defined as penile length below two standard deviations of mean value. There is no treatment with solid evidence in clinic. Our previous study found the expression of Lysyl oxidase (LOX) is downregulated with aging. Therefore, we use anti-LOX to moderate the tunica albuginea remodeling and observe penile lengthen. In the meantime, we evaluate it effects on erectile function.

**Methods:** This study was performed on two phases of rats: puberty and adulthood, and intervened for 7 weeks. Puberty protocol included groups of control, anti-LOX ( $\beta$ -aminopropionitrile), -200 mmHg vacuum aspiration (VA), -200 mmHg VA + anti-LOX, -300 mmHg VA, and -300 mmHg VA + anti-LOX; adulthood protocol comprised groups of control, anti-LOX, -300 mmHg VA, and -300mmHg VA + anti-LOX. Penile length was measured by a modified VA device and verified by stretched

status. Intracavernous pressure (ICP) and maximum ICP/ mean arterial pressure ratio were recorded to assess erectile function. Western bolt and histopathological staining were performed to reveal LOX activity, and transmission electron microscope was performed to reveal the microstructural changes. The concentrations of pyridinoline, desmosine, hydroxyproline and elastin were also analyzed.

**Results:** In puberty groups, anti-LOX significantly increased penile length by 10.79 % than control rats; the lengthening effect was more prominent in -300 mmHg VA + anti-LOX group, which is 19.84% longer. In adulthood groups, even less effective, -300 mmHg VA + anti-LOX significantly lengthened penis by 17.35%, no penile retraction observed one week later, while stretched penile length was also significantly longer (14.35%). Anti-LOX inhibited LOX activity to reduce pyridinoline level, which led penile tunica albuginea remolding. Finally, anti-LOX had no impact on erectile function, whether combined with VA or not.

**Conclusions:** Penile length is significantly increased by anti-LOX, which inhibited pyridinoline to induce tunica albuginea remolding in puberty and adulthood rats, and all rats have on erectile dysfunction.

Keywords: Anti-Lysyl oxidase (anti-LOX); pyridinoline; tunica albuginea

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