THE ROLE OF EXOGENOUS SEX STEROIDS ON THE VAGINAL MICROBIOTA: A SYSTEMATIC REVIEW

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Background: We conducted a systematic review (PROSPERO:CRD42018107730) to determine the influence of exogenous sex steroid-use on the vaginal microbiota (VM) of reproductive-aged women using hormonal contraception (HC) and peri/post-menopausal women using hormone replacement therapy (HRT).

Methods: Eligible studies reported on the effect of specific HC-types or HRT-use on the VM using a molecular method. Data regarding the 'positive', 'negative' or 'neutral' effect of each HC-type and HRT-use on the VM was summarised. A HC-type/HRT-use was designated to have a positive effect if it was associated with an increased abundance of lactobacilli, a change to or maintenance of an optimal VM composition, or a decrease in bacterial diversity (specifically reflecting a low-diversity optimal VM state), relative to the control group for that study. A HC-type/HRT-use was designated as having a negative effect on the VM if it resulted in opposing effects (i.e. loss of lactobacilli, a non-optimal VM state). When no change was found, this was considered a neutral effect.

Results: 2647 unique studies were screened for inclusion, 266 full-texts were assessed for eligibility, and 29 studies were included in qualitative data analysis. Among 25 studies of reproductive-aged women, 15/25 reported on >1 HC type. Oestrogen-containing contraceptives, predominantly reflecting the combined-oral contraceptive pill, had a positive effect on the VM in 11/14 studies. The effect of progesterone-only contraceptives were less clear; of 22 studies, 9 showed a positive effect, 9 a negative effect, and 4 found a neutral effect. In particular, Depo-Provera-use was designated as negative in 6, positive in 3, and neutral in 2 studies. All 4 studies investigating HRT-use demonstrated a positive influence of HRT-use on the VM.

Conclusion: Exogenous sex steroids, particularly oestrogen-containing methods, may promote an optimal VM in women. Further studies are needed to determine if specific steroid-types are more beneficial than others.

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