



P29. DESCRIPTION OF THE DEVELOPMENT OF A NEW CONTRACEPTIVE VAGINAL RING

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Context

Development efforts on contraceptive vaginal rings were initiated over 40 years ago, based on two principles: The capacity of the vaginal epithelium to absorb steroids and, the capacity of elastomers to release the hormones at a nearly constant rate

Objective

Describe the development of a new contraceptive vaginal ring, with the optimal characteristics of size, adequate release rate of progestin and estrogen compatible with contraceptive effectiveness, and additional benefits compared with current contraceptive vaginal rings on the market

Methods

Determine the composition of the ring that allows an ideal solubility of the active substance while allowing a gradual and constant release. Measurement of the vaginal ring (VR) flexibility using a Dynamometer (FDM) to measure the force to compress the ring (N). Characterization of the daily "in vitro elution" (IVE) of the ETO and EE released for 3 weeks.

Intervention

An Aliphatic Thermoplastic Polyurethane (ATPU) has been selected with a high capability to dissolve ETO and EE; VR was prepared using ATPU in the core and EVA 28% VA as a membrane. VR was characterized and pulled in stability

Main Outcome Measure

In vitro elution profile compared with current available contraceptive vaginal rings. In vitro elution duration. Ring membrane thickness to allow gradual and constant release. VR size and flexibility to ensure user friendliness

Results

The in vitro elution of the new VR was comparable to the one of the currently available vaginal rings, the duration of the hormones lasted for at least 21 days with an initial gradual and constant release of hormones. The size was comparable to the one of the current vaginal rings and the flexibility was also comparable.

Conclusions.

The new polymers used on this vaginal ring, allows the ring to be more stable, this avoids the initial

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burst effect, allowing a gradual release of the hormones, and also a constant drug release during the time of use.

This ring has the same dimension as the current contraceptive rings on the market, it has similar flexibility, and it has a smoother surface.

Due to the higher solubility of the hormones on the ring, the ring is more stable, and this ring does not require any special temperature storage conditions