UNIVERSITY OF MINNESOTA ROCHESTER

OSPHENA: MAKING MEDICINES

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Introduction

- Vaginal atrophy or pain due to dryness during sexual intercourse is common in women after menopause because of the decline of estrogen levels leading to changes in cell composition of the vaginal epithelium.
- The underlying cause of vaginal atrophy is the major drop in estrogen levels due to menopause, which can cause a woman's hormones in her body to be unbalanced (Unalike & Kari, 2013,107-115).
- Osphena is a non estrogenic drug, it acts as a copy of an estrogenic supplement, which is evolutionary for treatment for vaginal atrophy since it will not throw women's hormones off balance (Wurz, Degregorio, 2014, p.1939-1950).

Pre-Clinicals

- Unalike and Kari (2013) performed a pre-clinical study on the drug Osphena, using rats as the model.
- The results of this study showed a significant increase in vaginal weight and epithelial tissue (2013).
- Since the results of Osphena showed a positive relationship of increase in vaginal weight and tissue, the case was deemed safe for further clinical phases (2013).

Conclusions

- Overall, most symptoms of Osphena were mild in severity with hot flashes being the most common (FDA, 2019).
- Results showed a significant improvement with dyspareunia in postmenopausal women (FDA, 2019).
- Osphena went on to be approved by the FDA as a prescription medicine used by postmenopausal women to treat vaginal dryness and moderate to severe dyspareunia (FDA, 2019).

Discussion

- Should Osphena be used for women who are not postmenopausal, but have the same symptoms that need treatment (Rutanen et al, 2013)?
- Is it ethical to prescribe Osphena as a treatment for vaginal atrophy to postmenopausal women, considering it is being linked to increasing the occurrence of breast cancer, infection, and cardiovascular problems (Unalike & Kari, 2013)?
- When Osphena was only tested mainly on a small percent of people who do not represent the overall population taking this medicine, is it fair to say it is safe for everyone (FDA, 2019)?
- Since Osphena is not the only drug available to treat dyspareunia, should the doctor or patient have more say in which treatment open is used (Simon et al., 2013)?

Clinicals

Phase I

FDA (2019) findings

- 826, white, non-obese women going through menopause participated in phase I of Osphena.
- In order to participate you needed to have less than or equal to 5 percent superficial cells on a vaginal smear, a pH of less than 5 in their vaginal canal, and had more than one serve symptom of dyspareunia.
- The results showed that there was an increased number of superficial cells and a decrease in vaginal pH levels when the women took 60 mg of Osphena.

Phase II

Rutanen et al. (2003) findings

- Double-blind study, 160 postmenopausal women selected randomly in phase II of Osphena.
- Participants received osphena at three different doses or placebo treatment for 3 months. Effects Osphena had on hormone levels, genital tract organs, and climacteric symptoms were measured.
- Results showed that Osphena exerted a strong estrogenic effect on the vaginal epithelium at all doses in the placebo-controlled study.

Phase III

Simon et al. (2013) findings

- This long-term 52-week study consisted of 301 postmenopausal women.
- The results determined the use of Osphena was clinically safe and well tolerated with very few adverse events.

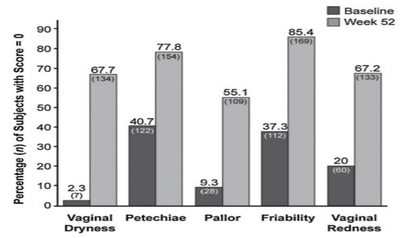

Figure 1. This graph shows the percentage of participants with a score of 0 ("none") for each parameter, as assessed by visual evaluation of the vagina at Baseline and at Week 52.

References

Food and Drug Administration. (2019) Osphena (ospemifene). Retrieved from https://www.accessdata.fda.gov/drugsatfda_docs/label/2019/203505s015lbl.pdf

Rutanen EM, Heikkinen J, Halonen K, Komi J, Lammintausta R, & Ylikorkala O. (2003.) Effects of ospemifene, a novel SERM, on hormones, genital tract, climacteric symptoms, and quality of life in postmenopausal women: a double-blind, randomized trial. *Menopause. 10(5):433–439.* DOI: 10.1097/01.GME.0000063609.62485.27

Simon, J., Portman, D., Mabey, R.G. & Ospemifene Study Group. (2014, March). Long-Term safety of ospemifene (52-week extension) in the treatment of vulvar and vaginal atrophy in hysterectomized postmenopausal women. Retrieved from https://doi.org/10.1016/j.maturitas.2013.12.005

Unalike, M., & Kari, S. (2013, February 1). Vaginal effects of ospemifene in the ovariectomized rat preclinical model of menopause. *The Journal of Steroid Biochemistry and Molecular Biology,* 138, 107-115. https://doi.org/10.1016/j.jsbmb.2013.04.004

Wurz, G., & Degregorio, M. (2014, October 1). Safety and efficacy of ospemifene for the treatment of dyspareunia associated with vulvar and vaginal atrophy due to menopause. *Clinical Intervention of Aging*, 9, 1939-1950. DOI: 10.2147/CIA.S73753