

Blue light-emitting diode in healthy vaginal mucosa-a new therapeutic possibility.

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ABSTRACT

A healthy female genital mucosa has an ecosystem that remains in balance through interactions between endogenous and exogenous factors. The light-emitting diode (LED) is a device that emits light at different wavelengths, with varying color and effects. Blue light in humans is most commonly used for antimicrobial purposes and has been already applied to treat facial acne and gastric bacteria. Although blue LED therapy in humans has been reported, its properties against vaginal infections have not yet been investigated. This study aims to test the safety and effects of 401 ± 5 nm blue LED on healthy vaginal mucosa. Phase I clinical trial involving 10 women between 18 and 45 years old with healthy vaginal mucosa. The participants were illuminated by 401 ± 5 nm blue LED for 30 min and anamnesis, oncotic cytology, and pH measurement were made again after 21/28 days of treatment. In the re-evaluation, adverse effects were investigated. The mean age was 27 ± 5.4 years and one of the women was excluded due to interruption of use of oral contraceptives. Oncotic cytology done before and after therapy showed that the composition of the microflora remained normal in all participants. Vaginal pH remained unchanged in eight of the women and had a reduction in one woman (5.0-4.0). No adverse effects were observed during or after illumination. 401 ± 5 nm blue LED did not generate any adverse effects or pathogenic changes in the microflora and vaginal pH. The effects of 401 ± 5 nm blue LED still need to be tested in vulvovaginal pathogens. Trial registration number: NCT03075046.