

# Efficacy Evaluation of Estradiol on Hot Flushes in Postmenopausal Women: a Model-based Meta-analysis

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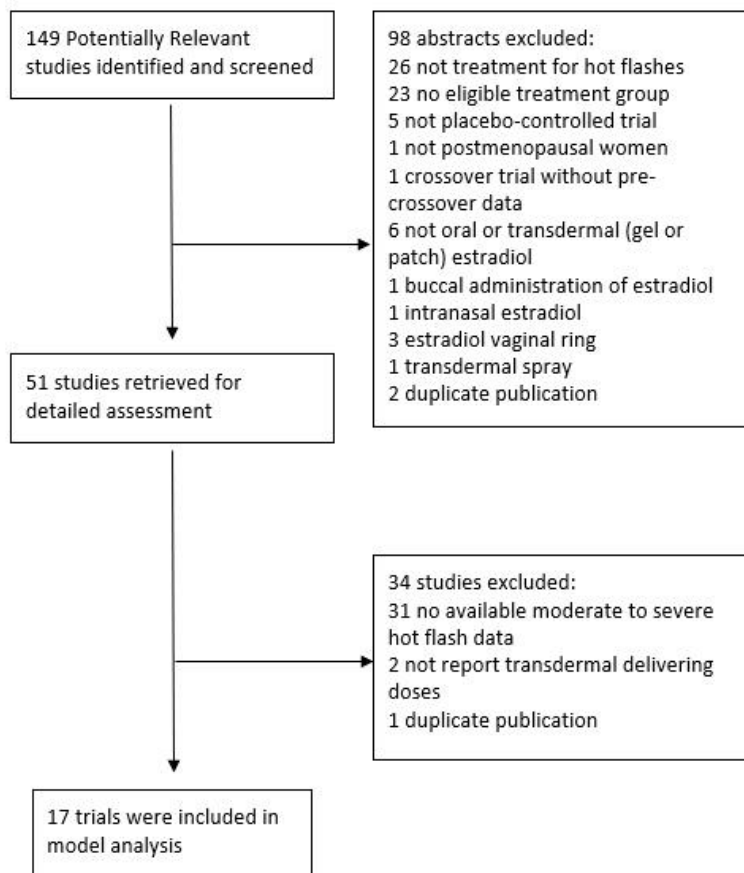
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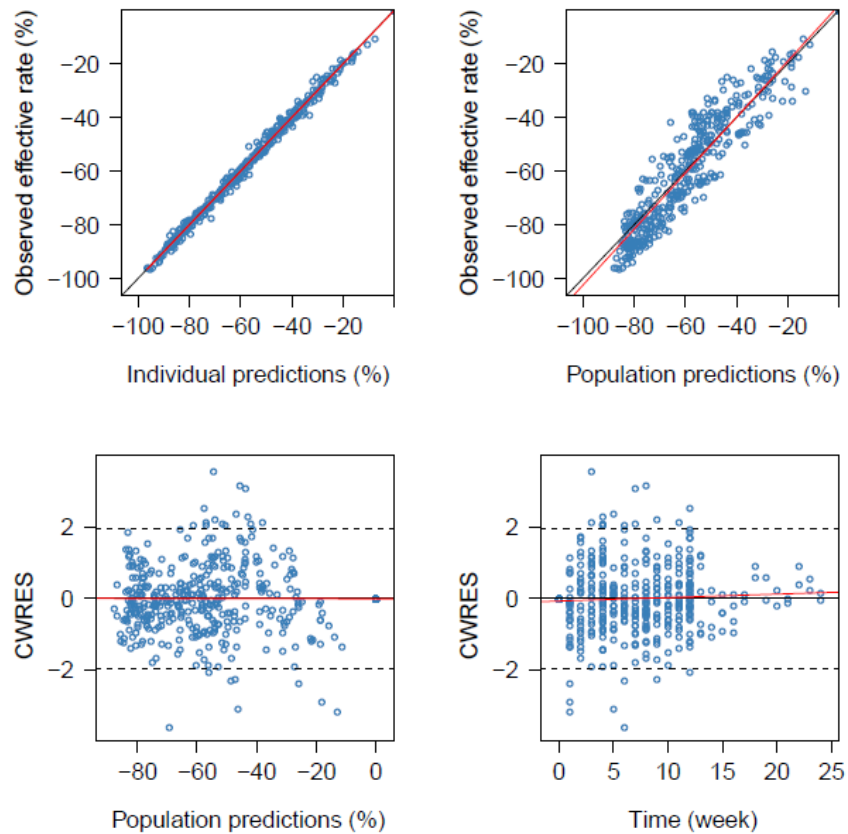
## Abstract

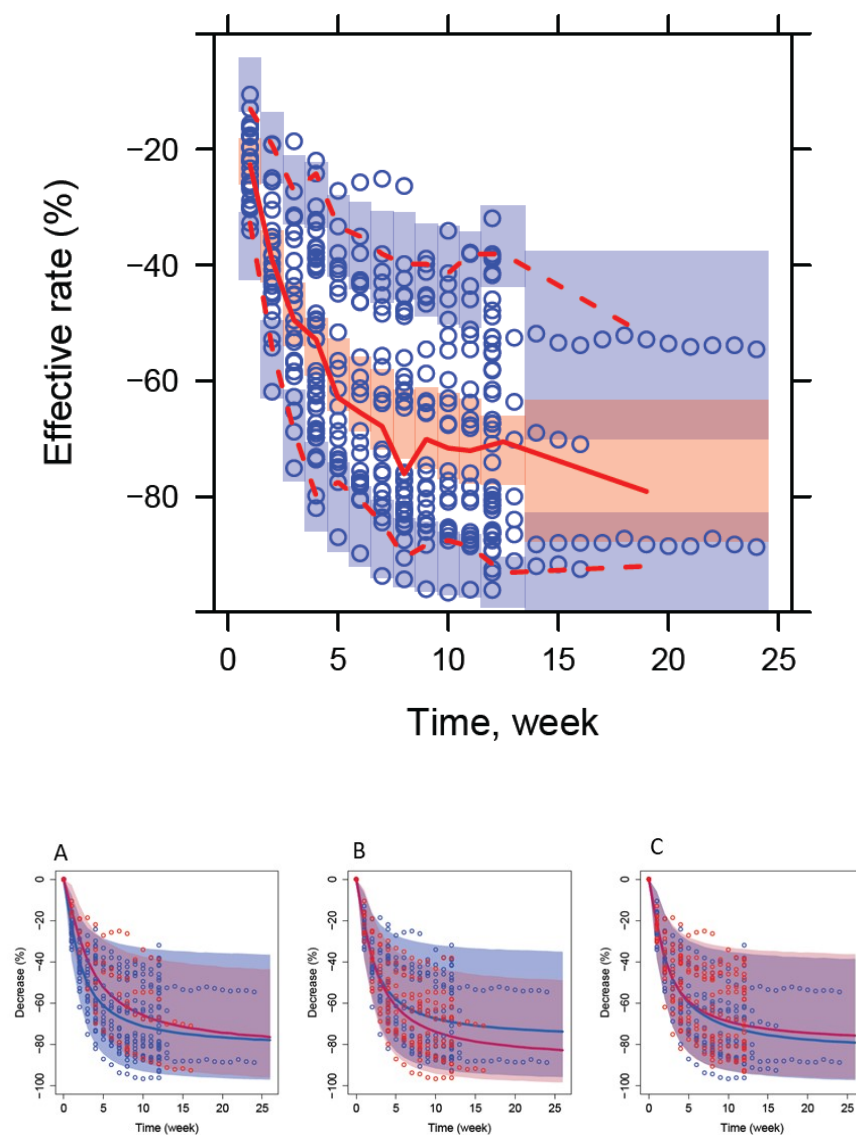
**Aims:** To evaluate the efficacy of estradiol in the treatment of menopausal hot flushes in women, quantify its efficacy characteristics as well as the placebo effect, and explore the influencing factors to establish an efficacy scale for the development of drugs for the treatment of menopausal hot flushes. **Data and methods:** A literature search was conducted to include clinical studies on estradiol for the treatment of menopausal hot flushes. Data of demographics, dose, administration route and efficacy were extracted and used to construct an efficacy model. Model simulations were used to obtain the efficacy in different populations with different doses and administration routes. **Results:** Seventeen studies, including 17 groups of placebo (1698 subjects) and 29 groups of estradiol (3013 subjects) with daily doses of estradiol ranging from 0.01 to 2 mg, were included. There were significant effects of administration route (oral or transdermal), ethnicity (Caucasian or Asian) and duration of menopause on model parameters. The efficacy was higher in non-Asians than in Asians, and weaker in menopausal women with > 60 weeks of menopause than < 60 weeks. The placebo effect was higher for shorter menopause duration, with a time to ED50 of 3.15 weeks for Asian and 1.96 weeks for non-Asians. **Conclusion:** The standard longitudinal efficacy scales of estradiol on menopausal hot flushes were constructed, and no difference was found in the efficacy of estradiol in Asians and non-Asians. The standard efficacy of estradiol in this study could inform the efficacy evaluation in new drug development.

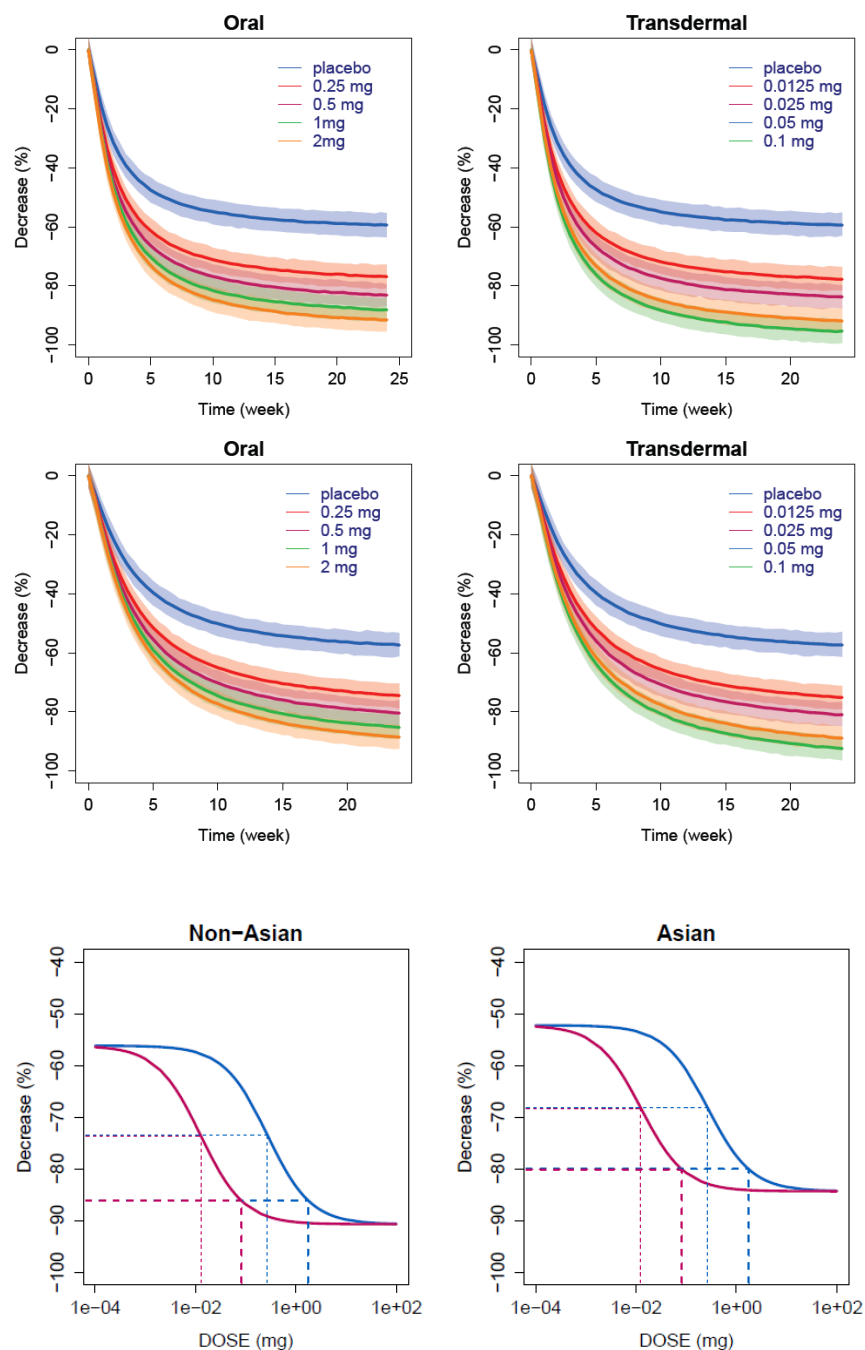
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