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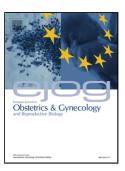
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### ACCEPTED MANUSCRIPT

# Effect of omega-3 supplements on vasomotor symptoms in menopausal women: A systematic review and meta-analysis

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#### **Abstract**

**Objective:** We aimed to investigate the effect of omega-3 supplements on relief of vasomotor symptoms among menopausal women.

**Study design:** The Cochrane Library, MEDLINE, SCOPUS, EMBASE, ProQuest, Google Scholar, Web of Science, CINAHL, IranMedex and SID databases were searched until September 2017. Inclusion criteria were (1) women were experiencing vasomotor symptoms in the menopause period, (2) intervention was omega-3 supplements (3) randomized controlled trial (RCT) or quasi-RCT, and (4) outcome measures included changes in the frequency and severity of hot flush or night sweats, sleep problems and side effects.

**Results:** Three randomized controlled trials involving 483 women in the age range of 51 to 54.7 years were included in the review. Overall, the risk of bias in the included studies was moderate. All the participants were found to be blinded. Meta-analysis of the data showed no difference in the frequency and severity of hot flushes, insomnia severity, sleep quality, quality of life and adverse effects between the two groups. Compared to placebo group, women who received omega-3 supplements experienced lower frequency (mean difference: -1.82, 95% CI: -2.81, -0.83) and severity (mean difference: -.89, 95% CI: -1.25, -0.53) of night sweats.

**Conclusions:** RCTs which investigate the impact of omega-3 supplements on vasomotor symptoms in menopausal women are scarce. A comprehensive search in a wide range of databases found only three relevant papers. Our analysis suggests that omega-3 supplements may alleviate night sweats but have no benefit in reducing hot flushes, or improving sleep quality and quality of life during the menopausal period. We recommend high quality RCTs along with a longer follow-up period to investigate this important subject, as there was insufficient evidence to conclude that omega-3 supplements are of benefit in alleviating vasomotor symptoms in menopausal women.

**Key words** Omega-3; Hot flushes; Vasomotor symptoms; Menopause

#### Introduction

Menopause is one of the most important events in a woman's life. It is a period of physiological changes that permanently affect the life of a woman [1]. Reduced estrogen levels during the menopause contribute to menopausal symptoms [2]. From perimenopause to the late postmenopausal stage of life, most women experience conditions such as vasomotor symptoms, vaginal dryness, sleep disturbance, somatic complaints, urinary complaints, depression and sexual

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