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Incidence of tamoxifen-related fatty liver disease: a systematic review and meta-analysis

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Background/Aims: It is well known that tamoxifen treatment is associated with an increased risk of developing nonalcoholic fatty liver disease (NAFLD). We conducted a systematic review and meta-analysis to evaluate the incidence of NAFLD using tamoxifen in breast cancer patients. **Methods:** We searched PubMed, EMBASE, and the Cochrane Library from database inception to December, 2018, for studies reporting incidence of NAFLD using tamoxifen. Cross-sectional, cohort and randomized controlled trials with >25 participants were included. The lists of authors and abstracts from the search were reviewed by two investigators to determine the manuscripts for full text review. Event rates were calculated using a random-effects model. **Results:** Twenty studies including 9796 patients met our inclusion criteria. The overall prevalence of obesity of tamoxifen induced NAFLD was 40.9% from 11 cross-sectional studies. The overall incidence of NAFLD was 71.0/1000 patient per years in tamoxifen group and 23.7/1000 patient per years in non-tamoxifen group from 1 randomized control trial and 8 cohort studies. The risk of NAFLD was much higher in tamoxifen group (incidence rate ratio 2.77, 95% CI 1.87-4.08, I2=69%). **Conclusions:** Use of tamoxifen is associated with increased risk of incidence and prevalence of NAFLD. Therefore, long-term use of tamoxifen requires clinical attention and regular liver imaging follow-up is required. Key words : tamoxifen; nonalcoholic fatty liver disease; incidence; prevalence