

## Musculoskeletal pain in women from DAMA Trial: role of a physical activity intervention

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Epidemiological studies showed that prevalence of musculoskeletal pain is higher in women than in men (Bracci et al. 2007; Salaffi et al. 2005) and low back pain is the most commonly reported whereas conflicting evidence exists for the association between physical activity and low back pain symptoms (Heneweer et al. 2011; Sitthipornvorakul et al. 2011). In this study, we investigated the prevalence of musculoskeletal pain and the role of a non-specific physical activity (PA) intervention in prevention/reduction of pain in the frame of the DAMA Trial. DAMA (n° ISRCTN28492718, funded by Istituto Toscano Tumori and Ministry of Health ) is a 24-month factorial randomized trial in post-menopausal women with high-Mammographic Breast Density (MBD), a risk factor for breast cancer (Masala et al. 2006), aimed to evaluate the ability of a structured intervention based on a moderate-intensity physical exercise and/or specific dietary modification, to reduce MBD. Participants were post-menopausal women, 50-69 yrs, with MBD>50%. Exclusion criteria were: current/recent HRT; current smokers; diabetes and/or other co-morbidities contraindicating dietary and PA intervention. After the baseline visit in which blood and urine samples, anthropometry, dietary and lifestyle information were collected, participants (234 women) were randomized by age- and BMI-stratified blocks, to one of the four arms: dietary intervention, PA intervention, dietary+PA intervention or control. The PA intervention included one hour/week exercise program carried out by exercise specialist, individual and group sessions to explain PA benefits, group walks and at least 1 hour/day of individual moderate PA (i.e. walking, biking, home exercise). The control arm received general advice on healthy diet and PA. To evaluate physical fitness of all participants, at baseline and follow-up (FU), specific visits were performed and a specific questionnaire on pain was self-administered to investigate body site of pain, pain intensity and duration. Baseline and FU pain questionnaires were completed by 210 women (102 randomised to PA intervention\*, 108 to control arm<sup>§</sup>). At baseline pain was reported by 154 women (73%), among them 75% reported back, 29% shoulder and 29% leg pain. After the 24-month intervention a significant effect emerged for low back pain in women randomised to PA intervention, in term of reduced prevalence of women with pain and prevention of new cases (p=0.02 in PA arm, 0.30 in control arm) suggesting also a beneficial effect of non-specific PA.

\*PA or dietary+PA arm; §dietary or control arm.

### Key words

Back pain, quality of life, physical activity, randomized intervention trial.