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OBJECTIVE: A recent meta-analysis suggested that the association between vitamin D and risk of hypertension was markedly stronger in women aged <55 years in observational data, while the association became null in women aged ≥55 years. We therefore hypothesized that this difference in associations might potentially be caused by the change in oestrogen around menopause. Our objective was to investigate associations between vitamin D status and hypertension risk and to evaluate those associations as they may differ according to menopausal status.

DESIGN: A cross-sectional population survey conducted by the US Centers for Disease Control and Prevention, National Center for Health Statistics.

SETTING: The National Health and Nutrition Examination Surveys (NHANES) 2007-2010 formed the setting for the present study.

PARTICIPANTS: We analysed data from 2098 premenopausal women and 2298 postmenopausal women.

RESULTS: After adjustment for sociodemographic, behavioural and dietary factors, higher concentrations both of serum total 25-hydroxyvitamin D (25(OH)D) and serum 25-hydroxycholecalciferol (25(OH)D3) revealed significant dose-dependent trends with lower risk of hypertension (Ptrend = 0·005 and 0·014, respectively) in premenopausal women. In those women, 25(OH)D ≥ 50 nmol/l (sufficient; in contrast to deficient, vitamin D < 30 nmol/l) appeared to have a protective effect against hypertension (OR = 0·64, 95 % CI 0·39, 1·02 for total 25(OH)D and OR = 0·60, 95 % CI 0·36, 1·00 for 25(OH)D3). Neither association with hypertension was observed in postmenopausal women.

CONCLUSIONS: Serum 25(OH)D concentrations were associated with lower risk of hypertension in premenopausal women, but not in postmenopausal women.

Risk-reducing salpingo-oophorectomy, natural menopause, and breast cancer risk: an international prospective cohort of BRCA1 and BRCA2 mutation carriers.

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BACKGROUND: The effect of risk-reducing salpingo-oophorectomy (RRSO) on breast cancer risk for BRCA1 and BRCA2 mutation carriers is uncertain. Retrospective analyses have suggested a protective effect but may be substantially biased. Prospective studies have had limited power, particularly for BRCA2 mutation carriers. Further, previous studies have not considered the effect of RRSO in the context of natural menopause.

METHODS: A multi-centre prospective cohort of 2272 BRCA1 and 1605 BRCA2 mutation carriers was followed for a mean of 5.4 and 4.9 years, respectively; 426 women developed incident breast cancer. RRSO was modelled as a time-dependent covariate in Cox regression, and its effect assessed in premenopausal and postmenopausal women. RESULTS: There was no association between RRSO and breast cancer for BRCA1 (HR = 1.23; 95% CI 0.94-1.61) or BRCA2 (HR = 0.88; 95% CI 0.62-1.24) mutation carriers. For BRCA2 mutation carriers, HRs were 0.68 (95% CI 0.40-1.15) and 1.07 (95% CI 0.69-1.64) for RRSO carried out before or after age 45 years, respectively. The HR for BRCA2 mutation carriers decreased with increasing time since RRSO (HR = 0.51; 95% CI 0.26-0.99 for 5 years or longer after RRSO). Estimates for premenopausal women were similar.

CONCLUSION: We found no evidence that RRSO reduces breast cancer risk for BRCA1 mutation carriers. A potentially beneficial effect for BRCA2 mutation carriers was observed, particularly after 5 years following RRSO. These results may inform counselling and management of carriers with respect to RRSO.
Objective: Lifestyle patterns are not only related to healthy life but also could be related to modifying menopausal symptoms. Considering the lack of data, the present study aimed to evaluate the relationship between lifestyle and vasomotor symptoms among Iranian postmenopausal women. Materials and Methods: The present cross-sectional questionnaire-based study was conducted among 302 eligible postmenopausal women referring to Shahroud health centers (Shahroud, Iran) during June 2017 and October 2018. The Iranian standard questionnaire on women health project (Saba questionnaire) was used for data collection. Our data were analyzed using the SPSS software (version 18). Descriptive statistics, Chi-square test, Fisher's exact test, and multiple logistic regression were used to address sociodemographic characteristics among our participants and the relations between lifestyle and vasomotor symptoms. Results: We found a significant relation between daily dairy units ($P = 0.05$), daily vegetable units ($P = 0.01$), weekly use of solid oils ($0.01$), and hot flush. The relation between daily vegetable units and urinary incontinence was also statistically significant ($P = 0.02$). When we use multiple logistic regression, we found significant predictive relations between daily vegetable unit status ($P = 0.01$), weekly use of solid oils ($P = 0.04$), body mass index ($P = 0.03$), and hot flush. Conclusion: The study provided findings to support the probable relation between some of lifestyle-related variables and vasomotor symptoms in postmenopausal women.


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Menopause has been identified as a high-risk stage for weight gain in a woman's lifecycle. Menopause-related weight gain is a consequence of low circulating estrogen levels due to progressive loss of ovarian function. Moreover, the changes in the hormonal milieu, chronological aging, decline in physical activity coupled with westernized dietary pattern, and recurrent emotional eating episodes associated with psychological distress also contribute to the increase in total body fat and waist circumference. Higher waist circumference is an independent risk factor for cardiovascular and metabolic disease in menopausal women. These obesity-related cardiometabolic risk factors and menopausal symptoms can be effectively managed by achieving clinically significant weight loss through lifestyle modification. Behavioral lifestyle intervention uses behavioral techniques for counseling corrective dietary and physical activity practices in achieving sustainable weight loss outcomes. Majority of menopausal women seek this counseling from gynecologist, especially in primary care settings due to nonavailability of multidisciplinary teams. Thus, the aim of the review is to understand the menopause-obesity link, associated risk factors, and its health-related burden in perimenopausal women to devise a practical women-centric weight management module based on lifestyle modification techniques to address the burden of menopausal obesity in regular gynecological practice.


Glucocorticoid use is an independent risk factor for developing sarcopenia in patients with rheumatoid arthritis: from the CHIKARA study.

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INTRODUCTION: Patients with rheumatoid arthritis (RA) are at higher risk of sarcopenia because of joint dysfunction and chronic inflammation. The present study aimed to investigate the predictors or risk factors for developing sarcopenia in RA patients using the prospective observational CHIKARA database. We hypothesized that older age, higher disease activity, lower physical function, and glucocorticoid (GC) use are risk factors for sarcopenia. METHODS: A total of 100 consecutive RA patients participated in the CHIKARA study. Their body compositions were examined using a body composition analyzer. Laboratory data, disease activity, physical function, and treatment were investigated. Sarcopenia was assessed at baseline and at 1 year. Predictors or risk factors for sarcopenia development at 1 year were investigated by univariate and multivariate analyses. RESULTS: Of 68 patients without sarcopenia at baseline, 9 (13.4%) developed sarcopenia over the year. Univariate analysis showed that age ($r = 0.28$, $p = 0.022$), average GC dose over the year ($r = 0.25$, $p = 0.043$), and body mass index ($r = -0.28$, $p = 0.019$) were significantly associated with the development of sarcopenia. Average GC use at $\geq 3.25$ mg/day was a significant factor on multivariate analysis (odds ratio 8.81, 95% confidence interval 1.14-67.9, $p = 0.037$). CONCLUSIONS: RA patients using GCs at an average dose $\geq 3.25$ mg/day over 1 year were at higher risk for developing sarcopenia. Reduction or withdrawal of GCs may prevent sarcopenia. Key Points • Patients with RA are at higher risk of sarcopenia. • Predictors or risk factors for developing sarcopenia over 1 year in RA patients were investigated using the prospective observational CHIKARA database. • RA patients using GCs...
at an average dose ≥ 3.25 mg/day over 1 year were at higher risk for developing sarcopenia. Reduction or withdrawal of GCs may be essential to prevent sarcopenia.


The 17β-oestradiol treatment minimizes the adverse effects of protein restriction on bone parameters in ovariectomized Wistar rats: Relevance to osteoporosis and the menopause.

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Objectives: Insufficient protein ingestion may affect muscle and bone mass, increasing the risk of osteoporotic fractures in the elderly, and especially in postmenopausal women. We evaluated how a low-protein diet affects bone parameters under gonadal hormone deficiency and the improvement led by hormone replacement therapy (HRT) with 17β-oestradiol. Methods: Female Wistar rats were divided into control (C), ovariectomized (OVX), and 17β-oestradiol-treated ovariectomized (OVX-HRT) groups, which were fed a control or an isocaloric low-protein diet (LP; 6.6% protein; seven animals per group). Morphometric, serum, and body composition parameters were assessed, as well as bone parameters, mechanical resistance, and mineralogy. Results: The results showed that protein restriction negatively affected body chemical composition and bone metabolism by the sex hormone deficiency condition in the OVX group. The association between undernutrition and hormone deficiency led to bone and muscle mass loss and increased the fragility of the bone (as well as decreasing relative femoral weight, bone mineral density, femoral elasticity, peak stress, and stress at offset yield). Although protein restriction induced more severe adverse effects compared with the controls, the combination with HRT showed an improvement in minimizing these damaging effects, as it was seen that HRT had some efficacy in maintaining muscle and bone mass, preserving the bone resistance and minimizing some deleterious processes during the menopause. Conclusion: Protein restriction has adverse effects on metabolism, leading to more severe menopausal symptoms, and HRT could minimize these effects. Therefore, special attention should be given to a balanced diet during menopause and HRT.


**Associations between Serum Levels of Cholesterol and Survival to Age 90 in Postmenopausal Women.**

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OBJECTIVES: Although elevated lipid levels predict increased risk of coronary heart disease and death in middle-aged women and men, evidence is mixed if lipid levels measured in later life predict survival to very old ages. We examined lipid levels and survival to age 90 with or without intact mobility in a large cohort of older women. DESIGN: Prospective cohort. SETTING: Laboratory collection at a Women's Health Initiative (WHI) center and longitudinal follow-up via mail. PARTICIPANTS: Women aged 68 to 81 years at baseline. MEASUREMENTS: Serum high-density lipoprotein (HDL) and low-density lipoprotein (LDL) cholesterol were collected at baseline. Participant survival status and self-reported mobility was compared across lipid levels. RESULTS: HDL and LDL levels were not associated with survival to age 90 after adjustment for cardiovascular risk factors (HDL: quartile (Q) 2: odds ratio [OR] = 1.14 [95% confidence interval [CI] = .94-1.38]; Q3 OR = 1.08 [95% CI = .88-1.33]; Q4 OR = 1.09 [95% CI = .88-1.35]; LDL: Q2 OR = 1.07 [95% CI = .88-1.31]; Q3 OR = 1.27 [95% CI = 1.04-1.55]; Q4 OR = 1.07 [95% CI = .88-1.31]). Similarly, no associations were observed between HDL and LDL levels and survival to age 90 with mobility disability. High HDL was not associated with survival to age 90 with intact mobility after adjustment for other cardiovascular risk factors. Compared with the lowest LDL quartile, the three upper LDL quartiles were associated with greater odds of survival to age 90 with intact mobility (LDL: Q2 OR = 1.31 [95% CI = .99-1.74]; Q3 OR = 1.43 [95% CI = 1.07-1.92]; Q4 OR = 1.35 [95% CI = 1.01-1.80]; P = .05). CONCLUSION: Neither higher HDL nor lower LDL levels predicted survival to age 90, but higher LDL predicted healthy survival. These findings suggest the need for reevaluation of healthy LDL levels in older women.