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M. H. Birkhäuser

PRESERVATION OF POSTMENOPAUSAL HEALTH BY CHANGING INDIVIDUAL LIFESTYLES

Introduction

Preservation of health is the final goal of all medical measures taken in postmenopausal women. In our greying world, it is of utmost importance that the elderly remain as long independent and valid as possible. One argument in favour of this goal is the desire to enjoy an optimal quality of life as long as possible. The other, economic, argument is less openly discussed. It is the necessity to diminish the national health care budgets and to reduce the global costs of geriatric medicine for the individual and for the community.

Menopause specialists are usually well informed about the risks and benefits of Hormone Replacement Therapy. But they are not necessarily well enough acquainted with the at least as important aspect of the preservation of postmenopausal health by changing individual lifestyles in their patients.

Life style and Bone Mineral Density

Bone Mineral Density (BMD) can be predicted by several factors, namely the years since menopause, alcohol use, smoking, exercise levels and weight. If these predictors are combined, the prognosis is correct in 76 %. Smoking has a clearly negative effect on BMD at the femoral neck. A study of Guthrie et al. [1] has been performed in 167 women aged 46–57 years. The difference of BMD between smokers and non-smokers was significant ($p < 0.05$). However, there is a clinical discordance between the three main sites of bone easily accessible to measurements: lumbar spine, femoral neck and distal radius**.** The following discordance, expressed as percentages, has been shown in 304 white peri- and postmenopausal women: normal BMD at all 3 sites: 25 %, osteopenia/-porosis at all 3 sites: 18 %, regional discordance: 55 %.

The correlation between body weight and BMD is significant (premenopause: $r = 0.337$, $p < 0.05$; postmenopause: $r = 0.289$, $p < 0.01$) as is the correlation between Body Mass Index (BMI) and BMD (premenopause: $r = 0.291$, $p < 0.05$; postmenopause: $r = 0.190$, $p < 0.05$; [2]).

Postmenopausal women suffer quite often from an insufficient physical fitness. Because the conservation of a normal bone density is linked to physical fitness, this parameter should be controlled. The best indicator of physical fitness is grip strength. There is a significant correlation coefficient between grip strength and BMD in postmenopause, independent of age and body weight ($r = 0.267$; $p < 0.01$; [2]).

The role of body composition and regular exercise has been investigated by Schaberg-Lorei [3] in 43 pre- and 66 postmenopausal women forming an active and an inactive group. The active group took an exercise for 60 min/day three-times/week (walking, jogging, resistive exercise), the controls did not take any regular exercise. In the exercise group, there was significantly less body fatness ($p < 0.002$). Body fatness is linked to the oestrogen levels measured in different populations. The oestrogen levels in Japanese and US women are discordant. E1 levels are greater by 47 %, E2 levels by 36 % in American compared to Japanese women. However, the difference is maintained after adjustment of lower weight of the Japanese women, so that other factors than BMI are involved [4].

Postmenopausal bone mass can be influenced by changing individual lifestyle. Women have to be encouraged to use an adequate diet, to avoid cigarettes and excess of alcohol, to have regular exercise and to accept HRT where indicated. A higher body mass index is favourable for bone, but could increase the cardiovascular risk if it surpasses the upper limit of the normal range.

On the other hand, postmenopausal women have to be informed on the risk factors influencing negatively BMD [5]:

The fracture risk can be minimised by the following pattern:
- premenopause: regular menses
- adequate diet
- regular physical activity
- moderate alcohol consumption
- no cigarettes
- calcium/Vit D-supplementation (particularly in the elderly)
- postmenopause: HRT

Life style and heart diseases

Physical activity has been shown to reduce the incidence of heart diseases in women (229 volun-

teers, 196 completed the study). The volunteers have been equally attributed to two groups. After a 10-yrs follow-up, 2 women (2 %) in the walking group and 11 women (12 %) in the control group suffered from heart disease [6].

Alcohol as a life style factor

It has been shown that alcohol consumption is correlated to BMC. Furthermore, it has been postulated that alcohol intake increases breast cancer risk. However, vant' Veer et al. [7] found no correlation between moderate drinking and breast cancer risk. The authors concluded that:

- drinking more than 30 g alcohol/day may enhance breast cancer risk in premenopausal women
- early start to drinking alcohol may increase breast cancer risk even beyond menopause

Life style and education

Women after menopause have to be educated to follow a favourable life style pattern. Toobert et al. [8] introduced a so-called "Prime-Time" program and compared it to standard control behaviour. The "Prime-Time" education consisted in the instruction to use a very-low-fat vegetarian diet, to stop smoking, to follow a stress-management training and to do regular exercise. The four test parameters were coping with stress, distress, social support and self-efficacy. The "Prime-Time" group showed a significant improvement in their behavioural pattern.

An interesting finding correlates social-physical anxiety and calorie expending: Women expending ≤ 500 kcal/wk possess a higher social-physical anxiety than women expending ≥ 2000 kcal/wk [9].

McTiernan et al. [10] reported in 492 women aged 50–64 years and observed over 2 years, that obesity, current cigarette smoking, low income, low education and some dietary factors are associated with sedentary life-style. At least some of these factors can be influenced by an appropriate education. Another study examined the role of alimentation and smoking [11]. The authors show that BMD is strongly related to the months spent smoking ($p < 0.05$). They found no relation to caffeine consumption, a finding that is in contradiction to an old oral tradition. There was a correlation with lifetime alcohol consumption.

The importance of life style factors has been shown by Gass and Gutzwiller [12]: In 4217 postmenopausal Swiss women, the incidence of osteoporosis was 22 % in presence of a diet poor in calcium, and 25–30 % in smokers (> 10 cig./day) and in women having a lack of exercise, or an abuse of alcohol.

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Martin H. Birkhäuser gained his medical degree in 1969 from the University of Basel Switzerland. He then took up a research post for 2 years investigating the regulation of aldosterone secretion. Following this, he became an Assistant Physician in the Medical Clinic at the University of Geneva, Switzerland, and in 1977 became Senior Fellow of the clinic. In 1978, Professor Birkhäuser received a diploma as a Specialist of Internal Medicine and Endocrinology. He then spent several years in research into aldosterone, thyroid and sex steroid function. In 1979, Professor Birkhäuser took the position of Consultant of Gynaecologic endocrinology at the Frauenklinik, Basel and, in 1987, he won the Schering Award for research into Polycystic Ovary Syndrome. He then moved to the University of Berne, Switzerland to take the position of Professor of Gynaecologic Endocrinology in the Faculty of Medicine. He is currently Head of the division of Gynaecologic Endocrinology and Reproductive Medicine at the University of Berne where he has been since 1989, Professor Birkhäuser is a member of numerous medical and scientific societies and is President of the European Menopause and Andropause Society.

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