

Conclusions

Steroid hormones (female sex hormones) were used mainly for the purpose of contraception and for HRT among German women under ambulant care. While the use of OCs changed very little among (western German) women population aged 25-40 years from 1984 (15.1%) to 1999 (17.5%), the use of HRT increased dramatically among German women aged 40-69 (3% in 1984 and 24.1% in 1998). Use of steroid hormones in former East Germany differed greatly from its western counterpart with a much higher prevalence rate in OC use and with a lower prevalence rate in HRT use, the differences remained after the reunification even in 1998/99. It is estimated that 4.8 million German women over 18 years old (West 3.7, East 1.1 million) and 3.58 million women under 80 years old (West 3.15, East 0.43 Million) were using steroid hormones in 1998/1999 for contraception and for HRT, respectively.

OCs used in Germany were mainly monophasic contraceptives containing low-dose ethinyl estradiol and levonorgestrel, the use of which increased steadily from 1984 to 1998. Unopposed regime of HRT (estrogen only) was more often used in the earlier surveys whereas opposed regime (estrogen and progestogen) was more often used in the last survey BGS98, the proportion of which increased from 19.6% in survey T0 to 58.8% in survey BGS98.

HRT use was closely associated with socioeconomic factors and personal lifestyle that are often considered to favor better health. In contrast, no significant differences were found between OC users and age-matched nonusers for most selected personal and socioeconomic factors except for body weight or body mass index though women with middle or higher education and women with middle or upper social class would more like to accept OCs than do women with lower one. Multivariate logistic regression analysis showed that determinants of OC or HRT use varied in different surveys along with time.

In general, steroid hormone users, either for contraception or for HRT, had no substantial differences in health status or overall health-related satisfaction with life compared with their age-matched controls. However, OC users tended to be more

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satisfied with health whereas HRT users tended to be less satisfied with their health. Such differences between steroid hormone users and controls were significantly enlarged along with time especially in the last ten years when use of HRT increased rapidly. Steroid hormone users differed from their age-matched controls in many aspects. OC users tended to show a lower prevalence rate in disease histories and unspecific diseases/symptoms, used less co-medications in the last 7 days, were less hospitalized in the last 12 months. HRT users tended to show a higher prevalence rate in disease histories and unspecific diseases/symptoms, used more co-medications in the last 7 days, and had more medical contacts in the last 4 weeks. Differences between steroid hormone users and controls could not be explained completely by a healthy or unhealthy user effect or any other factors, and therefore may be associated with steroid hormone use.

Contraceptives used in the earlier surveys may result in unfavorable effects, such as weight gain and hyperlipidemia. In the last survey, low-dose-estrogen-containing contraceptives (over 95% contain ethinyl estradiol), monophasic contraceptives were most popular. They were rather safe and less likely to cause such unfavorable effects anymore, though they were still associated with increased, yet clinically non-significant, blood pressure in younger women. In addition, contraceptive users showed some non-contraceptive benefits such as more regular menstrual cycles, increased blood levels in iron, ferritin and transferrin, which may be associated with a lower prevalence of iron-deficiency anemia. HRT use was associated with a better glycemic control and thus might be associated with a decreased risk of diabetes, but it might be also associated with an increased risk of arthritis in elderly women. Though favorable lipid profiles were found in HRT users, no overall benefits on cardiovascular diseases following HRT use could be observed, which is consistent with the results of several large randomized clinical trials.

Use of steroid hormones in the general population showed different profiles of health-related outcomes in young women for contraception and in elderly women for HRT. In general, OC users showed overall a better health status than nonusers in satisfaction with health and disease histories though the effect of healthy users could not be excluded completely. While women may usually overestimate the risks following OC use, non-contraceptive health benefits such as a better cycle control,

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less blood loss, lower prevalence of anemia etc. are often neglected. For women without increased blood pressures, use of modern OCs is rather safe and more benefits than risks should be expected. Though HRT use was closely associated with socioeconomic factors and personal lifestyle that perhaps favor better health, HRT users didn't show any significant improvements in some disease histories such as cardiovascular disease despite a favorable lipid profile and lower blood pressure. Indeed there may be even higher prevalence of cerebral circulation disorders and less health-related satisfaction with life and with health. For postmenopausal women, HRT showed no more benefits than risks and currently should not be recommended for long-term use.

However, specific studies should be designed in the future for associations of steroid hormone use with women's health-related outcomes. National Health Surveys are limited for these questions, though they can provide all-inclusive information under daily life conditions.

Different HRT regimes such as lower dose of ERT, different preparations of estrogens or progestins, or different routes of delivery should be further tested in randomized controlled clinical trials if they are beneficial for any specific subgroups of postmenopausal women in primary or secondary prevention of cardiovascular diseases. HRT showed a better glycemic control in postmenopausal women, this effect should be confirmed further in well-designed epidemiological studies and need to be balanced against the risks associated with HRT use in cardiovascular diseases and breast cancer.