HEALTH ISSUES FOR MENOPAUSAL WOMEN WHO SMOKE

Jennifer M. Blake, MD, FRCSC,[1]
Douglas Wilson, MD,[2]

[1]*Clinical Chief and Associate Professor,*
Department of Obstetrics and Gynaecology,
[2]*Professor, Family Medicine,*
McMaster University

ABSTRACT

Cigarette smoking is less common in menopausal women than in younger women, or in men of their age, but is a significant health risk to those who smoke. Smoking is also more common among women who are more socially and economically disadvantaged, with the attendant higher health risks of those groups. The mean age of menopause is earlier in smokers who also have been found to have higher circulating levels of androgens. Smoking increases the risk for heart disease and of osteoporotic fractures. Estrogen replacement may reduce somewhat the risk of cardiovascular disease, but smokers do not derive the same benefit as non-smokers, and continue to show greater all cause mortality. Smokers of menopausal age have accelerated skin aging and an increased risk of mucocutaneous cancers. Vulvar intra-epithelial neoplasia and invasive cancer are both increased in smokers. The often expressed concern that smoking cessation may lead to weight gain is borne out in the literature. Smoking cessation needs to be approached with attention to the specific issues of the individual patient. Women of menopausal age attempt cessation with a lower frequency than younger women, and may have more complex needs. Specific efforts to identify menopausal smokers may be necessary, as they may be under-represented in the women who present seeking health information at the time of the menopause.

RESUME

Les femmes ménopausées fument moins fréquemment la cigarette que les jeunes femmes ou les hommes de leur âge, mais cela constitue un risque significatif pour la santé de celles qui fument. Le tabagisme est aussi plus fréquent chez les femmes désavantagées sur les plans sociaux et économiques, et il s'ajoute aux risques concomitants pour la santé, qui sont plus élevés dans ces groupes. L'âge moyen de la ménopause est hâtif chez les fumeuses, dont on a constaté que les taux circulatoires d'androgènes sont également plus élevés. Le tabagisme accroît le risque de cardiopathie et de fracture ostéoporotique. La substitution des oestrogènes peut réduire légèrement le risque de cardiopathie, mais les fumeuses n'en tireront pas les mêmes avantages que les non-fumeuses et leur mortalité reste supérieure, toutes causes confondues. Les fumeuses d'âge ménopausique présentent un vieillissement accéléré de la peau et un risque accru de cancers cutanéomuqueux. La néoplasie intraépithéliale vulvaire et le cancer envahissant sont tous deux plus fréquents chez les fumeuses. La préoccupation souvent exprimée selon laquelle l'abandon du tabac peut se traduire par une augmentation du poids est corroborée dans la littérature. L'approche de l'abandon du tabac doit être caractérisée par l'attention aux questions qui intéressent spécifiquement chaque patiente. Les femmes d'âge ménopausique essaient de cesser de fumer moins fréquemment que les jeunes femmes, et leurs besoins peuvent être plus complexes. Il faudra peut-être déployer des efforts spécifiques pour identifier les fumeuses ménopausiques puisqu'elles sont sous-représentées parmi les femmes qui consultent pour obtenir de l'information en matière de santé au moment de la ménopause.

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INTRODUCTION

Menopause has become the topic of the nineties, with no sign of diminishing interest, and is now occurring in the generation of women who have pioneered all the way: those who first became working mothers, took birth control pills, and smoked in public. Fortunately, these are also the women who believe in health promotion, disease prevention, and partnership in health care. But the women who are seeking health promotional advice in menopause may not be the smokers, and the health issues for smokers are particularly significant.

So the stage is set for a generation of women who may, on the one hand, be at risk from smoking related complications, and on the other, who may or may not be receptive to smoking cessation as they pass through the transition of menopause. We need to know what percent of our menopausal patients are smokers, what risks they are exposed to, what concerns they have, what difficulties they may have in quitting, and what we can do to help.

WHO IS SMOKING?

A recent Hamilton survey shows that menopausal women aged 45 to 59 are less likely to smoke than young women, or than men of their age.[1] Half as many women over the age of 44 smoke compared to women from 25 to 44 years of age, and only approximately one-third as many women as men smoke in the perimenopausal age group.[1] As more young women have become smokers, there is no answer yet as to whether this trend will persist into menopause.

It is important for physicians to know and document the smoking status of the women in their practice. It is helpful to be able to put that into the context of their community. In Hamilton for example, 16 percent of women aged 44 to 64 are daily smokers.[1] Smokers are more likely to be from low income households, and to rate their own well-being as low.

Many smokers want to stop. It is encouraging that 31 percent of menopausal smokers attempted to quit within the past year, until we see that this is in fact the lowest percent reported by any group of men and women.[1] By contrast, 51 percent of women aged 20 to 44 reported attempting to quit in the past year. Of all people over the age of 15 who have ever smoked, 50 percent of men but only 44 percent of women have stopped. Not all menopausal women will be interested in smoking cessation, but it is important to be able to provide accurate information about risks and to be knowledgeable about the barriers to quitting, and how physicians may help patients to overcome them.

MENOPAUSE COMES TO THOSE WHO...

Menopause comes to all women, but it comes sooner to those who smoke. Repeated studies have shown that the age of menopause in smokers is from 0.8 to 1.7 years earlier than in matched non-smokers.[2,3] The effect is greatest for current versus never smokers, but is found in past smokers versus never smokers, suggesting that some degree of risk is persistent. A dose response relationship is found, with heaviest smokers showing the greatest effect.[2,4,5] Expressed as an odds ratio, the odds of menopause for current smokers versus never smokers was approximately double. The increased risk exists for women as young as 44 years of age.[4]

The information that we have is largely from cross sectional design studies. Although there are some animal data and some physiological studies, it is not known whether this results in a toxic effect of polycyclic hydrocarbons on the ovarian follicle, an effect on the release of pituitary hormones, or an effect on steroid metabolism.

ANDROGENS IN SMOKERS

It is important for physicians to confront myths and tales. A common tale around menopause is that women will become hirsute. While there appears to be no literature to suggest that smokers are hirsute, there is solid evidence that circulating levels of androstenedione and testosterone are elevated in menopausal women.[6] The author also found elevated levels of cortisol, and speculates that the hypercortisolaemia may contribute to the increased risk of osteoporosis seen in these women. Estrone, estradiol, dehydroepiandrosterone, and dihydrotestosterone levels were not different in smokers. Body mass is known to be linked directly to increased levels of estrone, and smokers have been found to have lower body mass.[6,7]

MENOPAUSAL CARDIOVASCULAR RISK

Of all the risk factors for cardiovascular disease, none is more modifiable than smoking. Odds ratios for smokers are approximately two and a half times that of

non-smokers for myocardial infarction (MI) or sudden death.[8] Risk is increased similarly for stroke and for angina. La Vecchia *et al.*[9] in a case control study of young and peri-menopausal (45 to 54 year old) women, found the risk to be elevated ten-fold in women who smoked more than 25 cigarettes per day. In a population survey in Hamilton-Wentworth, 54 percent of women smokers report between 11 and 25 cigarettes per day. Only three percent smoke more than 25 cigarettes per day compared to 31 percent of men of the same age. The risk from cigarette smoking is comparable to the risk attributed to positive family history, diabetes, or hypertension.

There may be many ways in which smoking affects cardiovascular risk. Haarbo *et al.*[10] have demonstrated that menopausal smokers have higher levels of low density lipoproteins (LDL-C), triglycerides, and apolipoprotein B/A-I. They have lower levels of high density lipoproteins (HDL-C) and a correspondingly higher ratio of LDL-C/ HDL-C.

Unlike other risk factors, this risk can be reduced or eliminated by smoking cessation, and the benefit increases with time. It is estimated that in young women, smoking cessation could effect a 64 percent reduction in MI and sudden unexpected death.[8] If the best time to quit was twenty years ago, the second best time is now.

THE BONES

Osteoporosis is another major health concern of menopausal women. Smoking is known to be associated with reduced bone mineral density,[11] and with an increased risk of hip and vertebral fracture.[12,13] Fracture rates are higher in women with lower body mass. The effect of smoking is independent of, and additive to, the body mass effect.

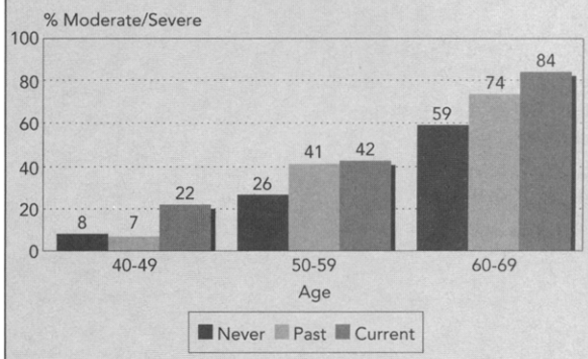
In thin smokers for example, the relative risk of hip/proximal femur fracture was 4.6 compared to never smoking heavier women. In smokers in general, the relative risk was 1.5 to 1.7 that of non-smokers.[12] The risk of fracture for past smokers appears to be reduced relative to current smokers, but they continue to be at increased risk when compared to the never smokers. There is a dose response relationship, with the highest risk for those smoking more than 25 cigarettes per day.[12,13]

A British study noted that women who smoked also had poorer oral hygiene and fewer teeth than non-smokers. They speculated that this may be related to lower bone density, but did not rule out confounders.[14]

FIGURE 1

FACIAL WRINKLES AND SMOKING STATUS

FEMALE



Percentage of subjects with moderate/severe facial wrinkling, by age and smoking status.
From: Ernster VL *et al.* Am J Public Health 1995;85:78-82.[15]

THE SKIN

While osteoporosis is something that may happen, skin aging is something that will happen. Repeated studies over the past several years have all come to the same conclusion: cigarette smoking accelerates skin aging and wrinkling. Ernster *et al.* found a relative risk of 3.1 for wrinkling in women over the age of 40 who smoked, and a direct relationship to the number of pack years.[15] Lopez *et al.* in a study of Spanish women, found that smoking had a greater effect on skin aging than sun exposure.[16] Cigarette smoking decreases capillary and arteriolar blood flow in the skin, and may damage the connective tissue which helps to maintain skin integrity. Smoking also increases the risk of cancerous and precancerous lesions on the lips and oral mucosae.

SMOKING AND HORMONE REPLACEMENT

Hormone replacement may be prescribed safely for menopausal smokers. The evidence relating risk of stroke and myocardial infarction to smoking in premenopausal women using oral contraceptives does not carry over into menopausal hormone replacement. Studies continue to demonstrate the protective effect of hormone replacement. Criqui *et al.*[17] in a population study in California, found a protective effect for both current and never smokers. In that study they were unable to demonstrate benefit for past smokers. Other authors have noted that smokers may not receive the same full protective benefit as non-smokers.[18]

In a study of the characteristics of estrogen users, they have been found to be generally healthier in that they are less likely to have smoked, and more likely to check their cholesterol levels and to exercise.[1,19] Hormone replacement therapy (HRT) users are more likely to be middle class and better educated than the typical smoker.[1,19] It is not clear whether smoking women are less likely to request HRT or whether physicians are less likely to prescribe to smokers.

SMOKING AND ENDOMETRIAL CANCER

The only good news for smokers has been the repeated observation that they are at lower risk for endometrial cancer than non-smokers. The risk declines with the amount smoked, and smokers did not show the same relationship of increasing risk with increasing weight.[20] Franks *et al.* found that smoking after natural menopause was associated with a 70 percent reduction in risk among smoking estrogen users compared to non-smoking estrogen users.[21] There was a 50 percent reduction in risk among smoking compared to non-smoking non-users. The studies of endometrial cancer and smoking report disease as the outcome of interest. Harlap *et al.* in a review of estrogen use and endometrial cancer, pointed out that during the sixties and seventies when the incidence of endometrial cancer rose in response to the use of unopposed estrogens, there was no corresponding increase, nor has there been since, in the number of deaths from endometrial cancer.[22] This is consistent with the knowledge that the hormone responsive cancers are likely to be well differentiated and in the early stage at the time of diagnosis. In general, smokers are at increased risk of death from cancer and have an increased age specific death rate. The death rate from lung cancer stands near 35 per 100,000 compared to three per 100,000 for endometrial cancer.[23]

SMOKING AND VULVAR CANCER

Vulvar cancer is less commented upon, but is a cancer primarily of post-menopausal women, many of whom are not receiving annual pelvic examinations. The risk for smokers is three and a half times that of non-smokers, increasing to nearly six-fold for heavy smokers.[23] The risk of vulvar intra-epithelial disease is also higher in smokers. It is important that physicians pay particular attention to the examination of the vulva in smokers. The conventional wisdom to biopsy any suspicious lesion is all the more pertinent.

SMOKING AND WEIGHT GAIN

A common concern of women smokers is the risk of weight gain. Weight control is one of the initiating factors that lead women to smoke. Unfortunately, there is little comfort in the literature. After 48 days abstention from cigarettes in one study, the mean caloric intake was found to go up by 227 calories per day,[24] resulting in a mean weight gain of 8.2 kilograms after one year. The smoking cessation literature advises against a concurrent weight control programme, but recommends that women be advised that after quitting smoking their weight will correct to their expected weight, as smokers are known to be lighter than their non-smoking counterparts. After stopping smoking successfully, attention can then be given to weight reduction.

SMOKING CESSATION

Health concerns are most commonly cited as the reason why women want to quit smoking, particularly in the age group over 65 years of age. Family and friends who smoke, low socio-economic status, lack of control, managing stress, and controlling anger are all reasons why women may smoke or resume smoking. Smoking may be enabling women to cope in complex situations. Menopausal women, who are trying to cope with a significant psychosexual transition, may not feel prepared to tackle smoking cessation as well. On the other hand, women increasingly are seeing menopause as an opportunity to take stock of their health and plan a health maintenance programme for the post-menopausal years.

Women are less likely to feel confident in their ability to quit, perceive more barriers to quitting, and anticipate more negative consequences. Physicians may be perceived as over simplifying the complex social and psychological issues, as patronizing and confrontational. On the other hand, women are more likely to seek advice from their physicians. Brief interventions will work for some, but may not address successfully the full range of needs of many patients. Referral to supportive intense programmes including small, women-focused groups, may be quite successful.

SUMMARY AND CONCLUSIONS

Smoking in menopause carries some additional risks to the smoker that can be substantially reduced by smoking cessation. Hormone replacement therapy (HRT)

may be helpful, but not to the extent that it appears to benefit non-smokers. There is no reason to withhold HRT from smokers. The physicians who are seeing women with menopausal concerns, be they family physicians or gynaecologists, have the opportunity and the obligation to address smoking as a key element in any woman's health care. It is appropriate to explore with the patient her thoughts about smoking and smoking cessation, her awareness of the health consequences of smoking or quitting, and to offer a range of options to explore. In all of these, the intent should be to inform, educate, and assist. Not all women will choose to quit, but a supportive and respectful relationship will provide the necessary base for ultimate success.

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