The Family Physician and Smoking in Pregnancy

Helen P. Batty, MD, MEd, CCFP, FCFP, and Hollister F. King, MD, CCFP, FCFP
Toronto, Ontario

Smoking in pregnancy and exposure of young children to smoke present significant long-term and short-term health hazards.[1–4] Reduction of smoking during pregnancy has been associated with improved pregnancy outcomes.[5–8] Many women spontaneously reduce their cigarette smoking before and during pregnancy.[9–12] Many smoking-cessation programs for pregnant women have reported a reduction in smoking frequency,[6,7,13–17] but not all,[18] and one program reports an increase in infant birthweights with reduced smoking.[6,7] These programs, however, are usually limited to pregnancy care. Medical counseling should avoid increasing the anxiety level of pregnant patients.[19–23] Ideally, family physicians who see women and children frequently during prenatal, postnatal, and well-baby visits could successfully use a multivisit smoking-cessation program to encourage and support permanent smoking cessation.

The study described here was undertaken to discover the extent to which the authors' family physician colleagues were already assessing their pregnant patients' smoking habits using the existing antenatal protocol, Ontario Antenatal Record I.[24]

METHODS

The study was conducted in a university-affiliated family practice teaching unit at Women's College Hospital, Toronto. The chart audit was made of the charts of all 150 women giving birth during 13 consecutive months while under the obstetric care of 15 academic family physicians and their family practice residents. The audit was conducted by a research assistant.

The Ontario Antenatal Record I is completed by the physician at the first formal antenatal visit as part of a full medical history and physical examination, usually within the first trimester of pregnancy. From these records, age and three standard items related to smoking were recorded: smoking status, the number of cigarettes smoked in a day, and whether any discussion of smoking occurred. The patients whose record indicated a positive reply to the first smoking question were designated as smokers. A survey was conducted of 178 patients using a sample of convenience among pregnant and postpartum patients in the waiting rooms to see how many were receptive to an offer of help to stop smoking from their family physicians. The survey has design limitations, as refusals were not documented.

RESULTS

Younger women were more often smokers: of teenagers aged 15 to 19 years, 8 out of 15 (53.3%) were smokers; of those aged 20 to 24 years, 12 of 38 (31.6%) were smokers; of those aged 25 to 29 years, 10 of 55 (18.2%) were smokers; of those aged 30 to 34 years, 6 of 30 (20.0%) were smokers; of those aged 35 to 39 years, 1 of 11 (9.1%) were smokers; and of those aged 40+ years, 1 of 1 (100.0%) smoked. Younger women were also more often heavier smokers, ie, they smoked more than 20 cigarettes per day (Table 1). Current smoking status was noted in 128 cases (85.3%). A discussion about smoking was recorded in 95 cases (63.3%). The incidence of smoking in this population was 25.3%, representing 38 smokers (as self-reported). Only 31 (81.6%) of the 38 smokers were asked the number of cigarettes they smoked per day, and physicians recorded discussing smoking with only 27 (71.0%) of all identified smokers.

DISCUSSION

These results show that family physicians in the study inquired about smoking status in 85% of all pregnant patients. Given the known effects of smoking on birthweight and other complications in pregnancy, this frequency does not seem often enough. Monitoring of blood

Submitted, revised, January 11, 1990.

From the Department of Family and Community Medicine, Women's College Hospital, University of Toronto. Requests for reprints should be addressed to Helen Batty, MD, Family Practice Health Centre, 60 Grosvenor St, Toronto, Ontario, Canada, M5S 1B6.

TABLE 1. ONTARIO ANTENATAL RECORD 1 AUDIT: PATIENT SMOKING RATES BY AMOUNT SMOKED (N = 150)

Age Group (years)	No. of Smokers	Amount Smoked* (cigarettes per day)			
		1–10	11–20	20+	Not Recorded
15–19	8	—	4	2	2
20–24	12	1	4	5	2
25–29	10	1	2	4	3
30–34	6	3	1	2	0
35–39	1	—	1	—	0
40+	1	—	1	—	0
Total	38	5	13	13	7

*For identified smokers.

pressure and carbohydrate intolerance in pregnancy is generally regarded as imperative, and obtaining smoking history and dose level (number of cigarettes per day) should also be considered essential. Only 82% of 38 identified smokers were asked about their level of cigarette use, and discussion of smoking was recorded in only 71%.

The data from this study show a prevalence of smoking and rates of cigarette use at various ages to be similar to those reported by Stewart and Dunkley[12] elsewhere in Ontario at the first prenatal visit and similar to smoking among Canadian women in general.[25] Ideally, health counseling discussions provide information on health risks, possibilities for acceptable management of risk behavior, and sympathetic, supportive exploration of social and emotional aspects of the smoking cessation.[26,27] Family physicians continue to do much of the prenatal care, routine deliveries, and well-baby visits in Canada, yet much of the Canadian data on smoking in pregnancy are derived from public health initiatives.[12,16]

This study looked at the actual practice of family physicians providing prenatal care. Patients do demonstrate a strong overall tendency to reduce cigarette use in pregnancy.[9–12] Pregnancy may indeed provide a teachable moment when permanent changes in smoking behavior would be easier to initiate,[16,28] as is seen after a major acute illness or heart attack. Pregnancy is not, however, a permanent state, and the postpartum period is difficult for many women,[20] so further characterization of this time in women's lives and the role of smoking or cessation requires careful study. Self-reported smoking rates may be somewhat lower than actual rates as a result of the growing social bias against smoking, especially in pregnancy. The review of physicians' records may also underestimate prevalence, since approximately 15% of the records lacked any indication of smoking status. Further studies using reliable biochemical indicators of smoking, such as serum cotidine,[29] as part of prenatal blood screening could be considered if effective smoking cessation programs are available.[30–32]

The waiting room survey showed that 55 (77.4%) of 71 smokers changed their smoking behavior around pregnancy, and 37 smokers (52%) indicated that they were interested in obtaining the family physician's help to quit or cut down. Although the research design in this study had obvious limitations, a significant number of these pregnant smokers did indicate an interest in receiving specific health counseling from their family physicians for smoking cessation in pregnancy and afterward, so perhaps this area is worthy of further examination. Physicians must be encouraged and trained in how to offer such advice effectively.[33] Research has indicated that some pregnant smokers may not heed the physician's advice.[18,19] The challenge is to create long-term programs that do not blame the victim but help her grow beyond her need for nicotine. Such successful programs might also then encourage family physicians to monitor carefully all pregnancies for smoking and actively intervene early during the pregnancy with counseling aimed at permanent smoking cessation.

Acknowledgments

This research was supported by a feasibility grant from the Ontario Ministry of Health for the Help Mothers Stop Smoking Project.

References

1. Pirani BBK: Smoking during pregnancy. Obstet Gynecol Surv 1978; 33:1–13
2. The Health Consequences of Smoking for Women: A Report of the Surgeon General. Public Health Service. Government Printing Office, 1980
3. Cardozo LD, Gibb DMF, Studd JWW, Cooper DJ: Social and obstetric features associated with smoking in pregnancy. Br J Obstet Gynaecol 1982; 89:622–627
4. The Effects of Smoking on the Outcome of Pregnancy, bulletin. Toronto, The Society of Obstetricians and Gynecologists of Canada, 1984; Sept–Oct, pp 3–4
5. Butler HR, Goldstein H, Ross EM: Cigarette smoking in pregnancy: Its influence on birth weight and perinatal mortality. Br Med J 1972; 2:127–130
6. Ershoff DH, Aarmson NK, Danaher BG, Wasserman FW: Behavioral, health and cost outcomes of an HMO-based prenatal health education program. Public Health Rep 1983; 98:536–547
7. Aaronson NK, Ershoff DH: Smoking cessation in pregnancy: A self-help approach. Addict Behav 1985; 10:103–108
8. Rantakallio PA: A follow-up study to the age of 14 of children whose mothers smoked during pregnancy. Acta Paediatr Scand 1983; 72:747–753
9. Baric L, MacArthur C: Health norms in pregnancy. Br J Prev Soc Med 1977; 31:30–38
10. Kuzma JW, Kissinger DG: Patterns of alcohol and cigarette use in pregnancy. Neurobehav Toxicol Teratol 1981; 3:211–221
11. Kruse J, LeFevre M, Zweig S: Changes in smoking and drinking

behavior during pregnancy in rural area. Presented at the 13th annual meeting of the North American Primary Care Research Group, Seattle, April 14–17, 1985
12. Stewart PJ, Dunkley GC: Smoking and health care patterns among pregnant women. Can Med Assoc J 1985; 133:939–994
13. Donovan JW, Burgess PL, Hossack CM, Yudkin GD: Routine advice against smoking in pregnancy. J R Coll Gen Pract 1975; 25:264–268
14. Danaher BG, Shisslak CM, Thompson CB, Ford JD: A smoking cessation program for pregnant women: An exploratory study. Am J Public Health 1978; 68:896–898
15. Reading AE, Campbell G, Corr DN, Gladman CM: Health beliefs and health care behavior in pregnancy. Psychol Med 1982; 12: 379–383
16. Langford ER, Thompson EG, Tripp EG: Smoking and health education during pregnancy: Evaluation of a program for women in prenatal classes. Can J Public Health 1983; 74:285–289
17. Sexton M, Hebel JR: A clinical trial of change in maternal smoking and its effect on birthweight. JAMA 1984; 251:911–915
18. Bauman KE, Bryan ES, Dent CW, Koch GG: The influence of observing carbon monoxide level of cigarette smoking by public prenatal patients. Am J Public Health 1983 ; 73:1089–1091
19. Graham H: Smoking in pregnancy: The attitudes of expectant mothers. Soc Sci Med 1976; 10:399–405
20. Ryan P, Booth R, Coates D: Experiences of pregnancy: A Report of a Survey of Post-Partum Women in Newcastle and Wollongong, June 1979. NSW, Australia, Newcastle Drug and Alcohol Services Health Commission of New South Wales, May, 1980
21. Bryce RL, Enkin MW: Lifestyle in pregnancy. Can Fam Physician 1984; 30:2127–2130
22. Enkin MW: Smoking and pregnancy—A new look. Birth 1984; 11: 225–229
23. Wilson D, Wood G, Johnston N: Randomized clinical trial of supportive follow-up for cigarette smokers in a family practice. Can Med Assoc J 1982; 126:127–129
24. Ontario Antenatal Record I. Toronto, Ontario Ministry of Health, 1984
25. Smoking and Behaviour of Canadians 1983. Ottawa, Health and Welfare Canada, 1985
26. Leventhal H, Cleary PD: The smoking problem: A review of the research and therapy in behavioral risk modification. Psychol Bull 1980; 88:370
27. Ockene JK, Benfari RG, Nuttall RL: Relationship of psychosocial factors to smoking behavior change in an intervention program. Prev Med 1982; 11:13
28. Fielding JE, Yankauer A: The pregnant smoker. Am J Public Health 1978; 68:838–836
29. Benowitz NL: Biochemical measures of tobacco smoke consumption. In Grabowski J, Bell C (eds): Measurement in the Analysis and Treatment of Smoking Behavior. National Institute on Drug Abuse (Rockville, Md) Research Monograph 48. DHHS publication No. (ADM) 83-1285. Government Printing Office, 1983, pp 6–26
30. Wilson DMC, Singer J, Best JA: Supportive follow-up for cigarette smokers in a family practice: Issues of method, analysis and state of the art. Can Med Assoc J 1987; 137:609–612
31. Rosser WW: The role of the family physician in smoking cessation. Can Fam Physician 1984; 30:160
32. Kozlowski LT, Page A: A second look at the effects of supportive follow-up on smoking cessation. Can Med Assoc J 1987; 137: 605–607
33. Wilson DM, Taylor DW, Gilbert JR, et al: A randomized trial of a family physician intervention for smoking cessation. JAMA 1988; 260:1570–1574