

Short communication

Antiperspirant use as a risk factor for breast cancer in Iraq

S. Fakri,¹ A. Al-Azzawi¹ and N. Al-Tawil¹

موانع التعرُّق كعامل اختطار لسرطان الثدي في العراق
سعد فخري، أحمد العزّاوي، نَمِير الطويل

الخلاصة: تناولت بعض الأخبار على شبكة الإنترنت العلاقة بين استخدام موانع التعرُّق وبين حدوث سرطان الثدي. ولذلك فقد قام الباحثون في إطار هذه الدراسة ببحث الترابط المحتمل بين استخدام موانع التعرُّق وبعض العوامل الأخرى، وبين حدوث سرطان الثدي في مستشفى الكاظمية التعليمي. ومن ثَمَّ تمت مقابلة 54 من المصابات بسرطان الثدي، وخمسين من الشواهد. وتبيّن أن 82% من الشواهد يستخدمن موانع التعرُّق، بالمقارنة مع 51.8% من المصابات ($P < 0.05$). وخلصت الدراسة إلى عدم وجود أيّ ترابط بين استخدام موانع التعرُّق وبين مخاطر الإصابة بسرطان الثدي، في حين وُجد ترابط بين حدوث سرطان الثدي وبين وجود سوابق عائلية أو استخدام موانع الحمل الفموية.

ABSTRACT Some internet communications have addressed the link between antiperspirant use and breast cancer. We studied the possible association between the use of antiperspirants and some other factors with the development of breast cancer in Al-Kadhmia teaching hospital. Thus, 54 cases of breast cancer and 50 controls were interviewed. We found 82.0% of the controls used antiperspirants compared with 51.8% of cases ($P < 0.05$). The use of antiperspirants had no association with the risk of breast cancer, while family history and oral contraceptives use were found to be associated.

L'utilisation des antisudoraux comme facteur de risque de cancer du sein en Iraq

Certaines communications électroniques sur l'Internet ont examiné le lien entre l'utilisation d'antisudoraux et le cancer du sein. Nous avons étudié l'association éventuelle entre l'utilisation d'antisudoraux ainsi que certains autres facteurs et l'apparition d'un cancer du sein à l'hôpital universitaire Al-Kadhmia. Cinquante-quatre (54) cas de cancer du sein et 50 témoins ont donc été interrogés. Nous avons constaté que 82,0 % des témoins utilisaient des antisudoraux contre 51,8 % des cas ($p < 0,05$). Il n'y avait aucune association entre l'utilisation d'antisudoraux et le risque de cancer du sein, alors qu'on a trouvé une association avec les antécédents familiaux et l'utilisation de contraceptifs oraux.

¹Department of Medicine, College of Medicine, Al-Nahrain University, Baghdad, Iraq

(Correspondence to N. Al-Tawil: altaweeln@yahoo.com).

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Introduction

Breast cancer is considered one of the major types of cancers among women, hence one of the leading causes of death [1]. In Iraq, breast cancer cases have increased dramatically, especially in the 1990s, and constituted 14.3% of all types of cancers in 1997 [1]. It has become a major public health problem. The research question of this study arose after reading a letter submitted by Elizabeth Morin which linked breast cancer with antiperspirant (not deodorant) use [2]. The idea, as Morin said, is that antiperspirants prevent the body from perspiring, and thus prevent it from removing toxins from under the armpits. As toxins do not disappear spontaneously, the body deposits them in the lymph nodes below the arms instead. These lymph nodes are located in the upper outside quadrant of the breast area where almost all breast cancer tumours occur [2].

Considering the importance of breast cancer, we reviewed the literature that links breast cancer with antiperspirant use and found a reference that addresses this issue [3]. Our current study aimed to assess the possible association between the use of antiperspirants and breast cancer, and to identify some other factors that are suspected of being associated with breast cancer.

Methods

All women (54) with breast cancer attending the oncology clinic of Al-Kadhmia teaching hospital from 1 September 2002 through 28 February 2003 were included as cases in the study. The inclusion criteria were any woman with breast cancer diagnosed histopathologically by excisional biopsy. Another group of 50 women, attending the general medicine clinic for various other

complaints, not including breast problems, was considered as the control group. Women attending the above-mentioned clinic and falling within the same 5-year age categories as the breast cancer cases were included in the control group. Only 50 controls could be recruited as a result of the invasion of Iraq in March 2003. We interviewed the cases using a self-designed questionnaire that included the following items: age, marital status, duration of the disease since diagnosis, family history of breast cancer, smoking status, use of oral contraceptives, and the use of antiperspirants.

Epi-Info, version 6 was used for data entry and analysis, and the chi-squared test of association was used to compare between observed and expected frequencies and between cases and controls.

Results

The mean age (standard deviation) of the cases was 43 (8.4) years, while that of the controls was 41.4 (15.1) years; the difference between the 2 means was not statistically significant ($P > 0.05$).

Table 1 shows that there was a significant association between family history of breast cancer and use of oral contraceptives with the development of breast cancer ($P < 0.05$): 32.1% of the cases had a positive family history of breast cancer compared with 8.0% of the controls and 38.9% of the cases had used oral contraceptives compared with only 10.0% of the controls. No significant association was found between either marital status or smoking habit and the development of breast cancer ($P > 0.05$).

Table 2 shows that 82.0% of the control group used antiperspirants compared with 51.8% of the cases, and this difference was statistically significant ($P = 0.00115$).

Table 1 Comparison between cases and controls regarding marital status, family history of breast cancer, smoking, and use of oral contraceptives

Variable	Cases (n = 54)		Controls (n = 50)		Statistical data
	No.	%	No.	%	
<i>Marital status</i>					
Married	45	83.3	39	78.0	$\chi^2 = 0.48, P = 0.49$
Single	9	16.7	11	22.0	
<i>Family history of breast cancer^a</i>					
Present	17	32.1	4	8.0	$\chi^2 = 9.19, P = 0.0024$
Absent	36	67.9	46	92.0	
<i>Current smoking^a</i>					
Yes	6	11.3	8	16.0	$\chi^2 = 0.48, P = 0.4885$
No	47	88.7	42	84.0	
<i>Use of oral contraceptives</i>					
User	21	38.9	5	10.0	$\chi^2 = 11.6, P = 0.000675$
Non-user	33	61.1	45	90.0	

^aData were missing for 1 case.

Discussion

Recently spam messages on the internet, news and books have addressed the link between antiperspirant use and the risk of breast cancer. Darbre et al. carried out a study on 20 samples of human breast tumour to detect the level of parabens (cosmetic preservatives that can mimic the action of estrogen) [4]. In 4 of the 20 tumours, total paraben concentration was more than twice the average level. In spite of this finding, Darbre suggests more studies are needed to support or refute this hypothesis [4]. On the other hand, some experts think that perspiration does not eliminate toxins and there

are in fact no toxins in sweat, which is made up of water, sodium, potassium, and magnesium [5]. The relation between antiperspirant use and breast cancer is considered as a myth in another website [6].

Although the sample size was relatively small, our study failed to find a link between antiperspirant use and breast cancer. In fact our study showed that antiperspirant use was higher among the control group than the cancer cases. The proportion of women with a positive family history of breast cancer among cases was fourfold the proportion among the controls. This is consistent with other findings. For example, it has been reported that women whose mothers

Table 2 Use of antiperspirants among cases and controls

Use of antiperspirants	Cases (n = 54)		Controls (n = 50)		Statistical data
	No.	%	No.	%	
User	28	51.9	41	82.0	$\chi^2 = 10.57, P = 0.00115$
Non-user	26	48.1	9	18.0	

or sisters have had breast cancer have a two-fold increased risk, and that women whose mother and sisters have breast cancer have a threefold increased risk [7]. Other studies report similar findings [8–11].

We found no association between cigarette smoking and breast cancer. In general this concurs with the results of epidemiological studies throughout the world [12,13], although some of them do not show consistent results [14,15]. Analysis of the results of 53 epidemiological studies showed that, after adjustment for the effect of alcohol, there was no association between smoking and breast cancer (relative risk for ever smokers = 1.03, 95% CI = 0.98–1.07 and for current smokers = 0.99, 95% CI = 0.92–1.05) [13]. Band et al. carried out a study involving 318 premenopausal women and 340 controls [16]. The risk of breast cancer was significantly increased in women who had been pregnant and who started to smoke within 5 years of menarche (adjusted OR 1.69, 95% CI = 1.13–2.51), and in nulliparous women who

smoked 20 cigarettes daily or more (OR = 7.08, 95% CI = 1.63–30.8) and had smoked for 20 cumulative pack-years or more (OR = 7.48, 95% CI = 1.59–35.2). On the other hand, postmenopausal women (700 breast cancer cases and 685 controls) whose body mass index increased from age 18 years to current and who started to smoke after a first full-term pregnancy had a significantly reduced risk of breast cancer (OR = 0.49, 95% CI = 0.27–0.89 [16].

Our study showed that there were more users of oral contraceptives among the cases of breast cancer compared with the controls. Other research has reported inconsistent findings regarding oral contraceptive use and breast cancer [7,17–19].

In conclusion, the use of antiperspirants was not associated with breast cancer. Family history of breast cancer and oral contraceptive pills use were found to be associated with breast cancer, while other variables such as marital status and smoking were not.

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