ABSTRACT

Introduction: Most studies regarding breast carcinoma risk factors compared it to the general population. In this study, we compare breast carcinoma risk factors to benign breast lesions.

Material and Methods: Core breast biopsies were performed from 610 patients. History of number of kids, lactation, pills intake, abortions, smoking, menarche age, and age at first pregnancy was taken.

Results: Breast carcinoma cases were 43% of all cases and the average age was 50 vs. 39 years for benign breast lesions. Twenty-four percent of breast carcinoma cases were <40 years of age. Axillary lymph nodes showed metastatic carcinoma in 43% of breast carcinoma cases. Family history was positive in 20% of breast carcinoma cases vs. 30% of benign breast lesions. Thirty-two percent did not lactate in breast carcinoma cases vs. 20% in benign breast lesions (P < 0.05). No difference was present between the two groups regarding: number of kids (4.2 vs. 3.9), percentage of those having kids (77% vs. 74%), age of menarche (13.2 vs. 12.9 years), and age at first pregnancy (22.2 vs. 21.5 years). Regarding lactation history, 32% of breast carcinoma patients did not lactate vs. 20% of patients with a benign breast lesion (P < 0.05). Duration of lactation was similar in both groups. Other differences between the two groups (breast carcinoma cases vs. benign breast lesions) were seen in contraceptive pills (33% vs. 14%, P < 0.009), smoking (number of smokers 21% vs 14%, P < 0.05), and obesity. Cancer types were ductal: 83%, lobular: 10%, CIS: 5%, others: 2%.

Conclusions: Lactation is a protective factor. No differences were seen in: number of kids, menarche age, and age at first pregnancy. Factors associated with breast carcinoma were cigarette smoking, hormonal pills intake, and obesity. Family history of breast carcinoma was associated more with benign lesions, probably due to that patients with positive family history were more worried about any breast lump than other people.

INTRODUCTION

This study is a prospective study of breast carcinoma risk factors in Jordan. Breast carcinoma risk factors have been studied extensively. Breast feeding, parity, pills, obesity, smoking, family history, and single-nucleotide polymorphisms have been linked to breast carcinoma in many studies (1, 2, 7, 8, 10, 15). Our study is unique in two ways: The first is that most of the previous studies were not performed in the Arab population. The second is that our study compared risk factor between two group of patients based on the results of core breast biopsies seeking medical advice to our clinic and not on mastectomy specimens. Most of the studies compared breast carcinoma discovered cases based on lumpectomy or mastectomy specimens and compared the risk to the general population (1, 2, 7, 8, 10, and 15). Arabic patients may have different types of breast carcinomas because of different life styles, consanguinity, and cross marriages. It was also important to document the percentage of estrogen and progesterone receptors and Her-2 neu expression in breast carcinoma arising in Arabic patients.
MATERIAL AND METHODS

We performed 610 breast biopsies on 610 females. The patients’ ages ranged from 12 to 88 years. All patients have undergone fine needle aspiration of breast lesions with core biopsies and axillary lymph nodes sampling if the lymph nodes were palpable. Full history was taken from the patients regarding: age, number of kids, lactational history, pills intake, history of abortions, smoking history, menarche and menopausal ages, and age at first pregnancy. Examination of the patients aimed at locating the tumor (right or left side), size of the tumor, lymph-node status, type of tumor or the benign lesions, and hormonal receptor status of carcinoma cells. None of our patients have prior history of breast carcinoma. Hormonal status for estrogen and progesterone receptors was determined using immunostaining on paraffin blocks from the core biopsies on all cases. Her-2 neu status was also determined by immunostaining using the American Society of Clinical Oncology/College of American Pathologist guidelines (16).

RESULTS

Ages of breast carcinoma patients ranged from 20 to 88 years, with an average age of 50.1 years. Twenty-four percent of cases were below the age of 40 years. The age of benign breast lesions ranged from 12 to 80 years of age, with an average age of 39 years. The carcinoma had more tendencies to be in the left breast 54% vs. 49% in the right side. Three percent of cases had bilateral breast carcinoma at the time of presentation to our clinic. Fifty-three percent of breast cancer cases were in the upper outer quadrant, 21% in the lower outer quadrant, 7% in the lower inner quadrant, and 24% in the upper inner quadrant; 1% of tumors involved the areola (taking into consideration that some tumors involve more than one quadrant). Size of the tumors ranged from 1 cm to the whole breast. In 2% of the cases, the masses were not palpable and there were mammographic findings, only 6% of the cases were inflammatory carcinoma involving the whole breast. The lymph nodes were palpated and biopsied in 73% of breast carcinoma cases vs. 41% of benign breast lesions. The lymph nodes showed metastatic carcinoma in 43% of breast carcinoma cases by fine needle aspiration. In 9% of breast carcinoma cases, discovering the metastatic site preceded the discovery of the primary breast tumor. The metastatic sites included axillary lymph nodes, supraclavicular lymph nodes, lung, liver, brain, and bone. Family history was positive in 20% of patients with breast carcinoma vs. 30% of patients with benign breast lesions (P < 0.005). Regarding lactation history, 32% of breast carcinoma patients did not lactate vs. 20% of patients with a benign breast lesion (P < 0.05). The two groups, breast carcinoma cases and the benign breast lesions, had almost similar results regarding average duration of lactation (4.26 vs. 4.33 years, respectively). Both groups had an almost similar percentage for having kids (77% vs. 74%), with an almost similar average number of kids (4.2 vs. 3.9). Age of menarche also showed no difference between both
groups (13.2 vs. 12.9 years). No difference was also seen regarding the female age at her first pregnancy between the two groups (22.2 vs. 21.5 years). Hormones seem to play a role in breast carcinoma. Female patients who took contraceptive pills more than 1 year in their life are 33% of breast cancer patients vs. 14% of patients with benign breast disease (P < 0.009). Smoking also played a role in breast carcinoma in Jordan: The percentage of smokers was 28% in breast carcinoma cases vs. 14% in benign breast lesion cases (P < 0.05). Obesity played an important role in breast carcinoma. The average body mass index was found to be 37 kilograms in breast cancer patients vs. 28 kilograms in patients with benign breast disease (P < 0.05). The most common type of carcinoma seen was ductal adenocarcinoma (83%) followed by lobular carcinoma (10%), carcinoma in situ (5%), sarcomas (1%), and lymphomas (1%). Estrogen receptor positivity was seen in 59% of breast carcinoma cases. Progesterone receptors immunostaining on tumor cells was seen in 56% of cases. Her-2 neu positivity was seen in 30% of cases. This was in almost same percentage in other studies (9).

To our surprise, family history of breast carcinoma was associated more with benign lesions. This is in contrast to other studies which found it to be a significant risk factor (1, 2). This is probably due to at least two factors: Patient with positive family history may be more cautious about any breast lump than other people who sought medical advise for breast lumps. The second factor is that this study is a comparison of breast carcinoma patients vs. patients with benign breast lesion and not the general population. The type of breast carcinoma was ductal adenocarcinoma in the majority of cases (in 83% of breast carcinoma patients), followed by lobular carcinoma (10% of the cases). This is similar to many studies that were performed on the types of breast carcinoma (11, 12).

REFERENCES


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