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An investigation of breast cancer risk factors in Pakistani population

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Breast cancer is the second most widespread and the utmost common cancer among females population in the world. It has foremost influence on women health. In 2012, worldwide 1.7 million women were diagnosed with breast cancer. However, deaths from breast cancer account for 1.6% of female deaths every year. It is well acknowledged that not only genetic variation but also the environmental factors play a vital role in increase of breast cancer risk. The main aim of this study was to determine the prevalence of breast cancer, also to determine the associated risk factors and to assess the strength of association between these risk factors with breast cancer among Pakistani women. Due to suitability in examining multiple etiological factors for a single disease we carried out an observational cross-sectional case-control study for the present research. The study includes 105 breast cancer patients and a group of 105 controls (healthy women). The information on demographic characteristics along with potential risk factors was collected from both groups by means of a standardized face to face interview. Pearson's Chi-square/Fisher's exact test was applied to find out the association between risk factor and breast cancer risk. Furthermore Logistic regression analysis was used to measure the strength of association, before and after adjusting for the possible confounding effect of the other factors. Nearly all the cases had self-detected breast lump and breast screening was not a widespread term. Delay in referral of the cases was another noteworthy finding. Most frequent age at diagnosis was found as 31-50 years and the most frequent stage was as 2nd stage. The most common histology was unilateral IDC. In multivariate models, Environmental area and exposure to X-Ray radiations were found to be significantly associated with breast cancer risk ($p = 0.012, 0.03$). While in chi-square association female with a positive family history of breast cancer/ were at higher risk for developing breast cancer (OR = 1.227, 95% CI = 0.655-2.300). An early age at menarche was found to be a strong risk factor for developing breast cancer ($p=0.014$). Age less than 12 years increased the risk 2.551 times and an older age at menarche was associated with a significant reduction in the risk of breast cancer. Menopausal status and age at last pregnancy was found strong risk factor of breast cancer in our study ($P \text{ value} < 0.05$). Overall the findings of our study corroborate with the results of other previous descriptive findings, though there were few regional and demographic differences were obvious. This study provides important background information for designing detailed studies that aim to improve our understanding of the epidemiology of breast cancer in the Pakistan.