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Early marriage and premenopause as a risk factor for breast cancer

J.K. Singh, A.Nath ,Mukul Mishra, Preety Jain, Arun Kumar, Md. Ali and Ranjit Kumar

Mahavir Cancer Sansthan and Research Centre, Phulwarisharif, Patna (Bihar), India.

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ABSTRACT

Cancer is currently the cause of 12% of all deaths worldwide. The number of cancer deaths annually will increase from about 6 million to 10 million. Breast cancer is the most commonly diagnosed cancer in women worldwide, with nearly 1 000 000 new cases diagnosed per year, and the second leading cause of cancer deaths in women worldwide. The causes of breast cancer remain largely unknown, but certain reproductive and hormonal factors are clearly related to risk. It is reported that one in 22 women in India is likely to suffer from breast cancer during her lifetime. The medical records of 300 patients treated at the Mahavir Cancer Institute and research Centre for breast cancer between 2005 and 2008 with perspective age of marriage and menstrual status were reviewed. In present study we can observe that breast cancer cases were more found in pre menopausal women i.e.: 55% than post menopausal women i.e.: 45%. Mean age of marriage is very earlier, which indicate that early marriage may be a causative factor for breast cancer. Thus it is concluded that early age marriage is risk factor for breast cancer as well as pre menopausal women are at higher risk for breast cancer.

Introduction

Cancer is currently the cause of 12% of all deaths worldwide. The number of cancer deaths annually will increase from about 6 million to 10 million. The principal factors contributing to this projected increase are the increasing proportion of elderly people in the world, an overall decrease in deaths from communicable diseases, the decline in some countries in mortality from cardiovascular diseases, and the rising incidence of certain forms of cancer, notably lung cancer resulting from tobacco use [1]. Cancer prevalence in India is estimated to be around 2.5 million, with over 8,00,000 new cases and 5,50,000 deaths occurring each year due to this disease in the country [2]. The common sites for cancer in India are oral cavity, lungs, oesophagus and stomach in males and cervix, breast and oral cavity among females. Over 70% of the cases report for diagnostic and treatment services in advanced stages of the disease. The causes of breast cancer remain largely unknown, but certain reproductive and hormonal factors are clearly related to risk [3]. The patterns of risk associated with reproductive history suggest that prolonged exposure to ovarian hormones increases breast cancer occurrence [1,2], and in fact, most studies have found that earlier age at menarche and later age at menopause are associated with greater risk [3]. Women with irregular or longer cycles and those with anovulatory cycles spend relatively less of their reproductive years in luteal phase; thus, they might be expected to have a lower risk of breast cancer [1,2].

Breast cancer is the most commonly diagnosed cancer in women worldwide, with nearly 1 000 000 new cases diagnosed per year, and the second leading cause of cancer deaths in women worldwide [4]. In a combined analysis of 22 studies of breast cancer patients who were not selected on the basis of a family history of breast cancer, the estimated risk of developing breast cancer by age 70 years was 65% among women who carried a deleterious mutation in the BRCA1 gene and 45% among those who carried a deleterious mutation in the BRCA2 gene [5]. Estimated risks of breast cancer are up to 40% higher in studies of breast cancer patients with a strong family history of the disease [6,7] . The difference in these risk estimates suggests the existence of genetic or shared environmental factors within families that modify the risk of breast cancer [7]. It is reported that one in 22 women in India is likely to suffer from breast cancer during her lifetime, while the figure is definitely more in America with one in eight being a victim of this deadly cancer. The problem with preventing breast cancer is that there is no one cause that can be pinpointed as being the culprit. Of course screening for the presence of BRCA1 and BRCA2 mutations is available though it must be admitted of being of little use in the Indian context.

Thus present study is designed to evaluate risk of breast cancer with early marriage and menstrual history mainly occurrence of breast cancer in premenopausal woman.

Materials and Methods

The medical records of 200 patients treated at the Mahavir Cancer Institute and research Centre for breast cancer between 2005 and 2008 with perspective age of marriage and menstrual status were reviewed. Approval for this study was obtained from the institutional ethical committee of the Mahavir Cancer Institute and research Centre. Only patients with breast cancer were included in this study.

Patients were evaluated for their preoperative age of marriage, menstrual histology, grade, International Federation of Gynecologists and Obstetricians (FIGO) stage. All patients were staged according to the FIGO staging system.

Results

Generally breast cancer cases were more likely reported with a family history of breast cancer, later age at first full-term pregnancy, and lower parity. In present study we can observe that breast cancer cases were more found in premenopausal women i.e.: 55% than post menopausal women i.e.: 45%

Tele: (0091) 9304450602
E-mail addresses: ranjitzool17@gmail.com

(Figure: II), which is very reversed than general trend found in developed country. Mean age of patients with breast cancer were 46.53 years. This indicates that breast cancer was reported in early ages also. Mean age of marriage is 15.33 years (Table: I) which indicate that early marriage may be a causative factor for breast cancer. Most of the patents were married between 13-16 years of age (Figure: I) and they all having early pregnancy.

Figure: I

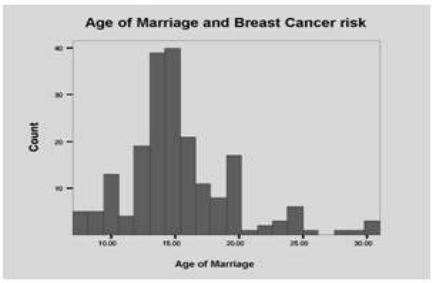
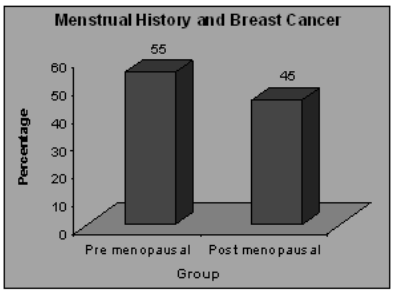


Figure: II



Discussion

It is well established that childless women and women having children later in life are at an increased risk of developing breast cancer. In particular, women having a first child before 20 years of age have a 50% reduction in lifetime breast cancer risk when compared with women who do not have children [8]. The only factor known to consistently decrease lifetime breast cancer risk regardless of ethnicity is early childbirth [9,10,11]. Women who have undergone a first full-termpregnancy/birth (FFTB) before 20 years of age have a 50% reduced lifetime risk of developing breast cancer when compared with nulliparous women [9], whereas first full-term births over 35 years of age lead to an increased risk of developing breast cancer [12]. This study indicates that early marriage may be a risk factor for breast cancer. Most of the patients having age of marriage between 13 – 16 years with T-test value of 50.662. Menstrual Factors plays significant role in Breast Cancer Risk, early menarche and late menopause were risk factor for breast cancer, post menopausal women having higher risk of breast cancer [13]. Out of all patients 55% patients were pre menopausal, which indicates that breast cancer were more reported in premenopausal women. Effects of reproductive-age and menstrual cycle patterns on peri- and postmenopausal facture as a risk factor for breast cancer were also explored [14]. Combined effect of childbearing, menstrual events, and body size on age-specific breast cancer risk was evaluated as a risk factor [15].

Conclusion:

Early pregnancies were found in women with early marriage which causes hormonal imbalance in body from early age, it may lead to breast cancer in them. It is also evident that pre menopausal women were undergo hormonal change every month, if any irregularity in hormonal parameters were occurs, it may cause proliferation in breast tissues. Thus it is concluded that early age marriage is risk factor for breast cancer as well as pre menopausal women are at higher risk for breast cancer.

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Table: I (Early Marriage and Breast Cancer)

N	Mean	Std. Deviation	Std. Error Mean
200	15.3300	4.2793	.3026

t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
				Lower	Upper
50.662	199	.000	15.3300	14.7333	15.9267