

Webinar on

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Shift work and breast cancer

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Worldwide breast cancer concedes the most commonly diagnosed female cancer, and it's become international important health issue. According to the report of World Health Organization (WHO) 519,000 deaths occur every year worldwide (WHO,2009), Since the number of incidence of breast cancer is increasing in both developed and developing countries and the etiological cause also primarily unknown, however, many predisposing factors like heritable factor concedes to be possibly major risk and minor proportion delayed menopause, early age of menarche and older age at first pregnancy that is concedes as minor risk factors. The demand for explanations for this disease a searching for new causes become real concern in society. One of the suggested causes of breast cancer is shift work, many studies point out that women with irregular working hours are at increased risk for breast cancer, since working at night and early morning require the use of artificial light which leads to suppression of pineal secretion of melatonin that may induce continuous production of estrogen involved in breast carcinogenesis.

During the last decade's increase diversity of shift work have been increased by society, including work at night. Therefore, it is important to investigate the relationship between this occupation risk and the prevalence of breast cancer.

Importance of health issue

Breast cancer is leading cause of death among women in industrialized societies, those society demand increase irregular working hours which have many negative impact on human wellbeing health in many aspect, socially, psychologically and physically, knowing it effect on prevalence of breast cancer make it more important occupational health risk, since breast cancer is one of the most threatened disease among female worldwide.

Why it's important in Kingdom of Saudi Arabia

For the past 15 years there is tremendous increase of working women in KSA. Women become a part of almost every working field, the demand for shift work in those fields is also inclined especially in hospitals where shift work is part in every field in it. Another issue in Saudi Arabia makes women shift work more important is the increase prevalence of breast cancer, by knowing the relationship between shift work and breast cancer can ply important role in preventing it.

AIM

The aim of this assignment is to address the possible relation between shift work and breast cancer.

Method

In order to find as far as possible all literature related to shift work and breast cancer, two methods were used in combination: 1- computerized search on appropriate key words using pub med, google scholar 2- King Fahad library.

Studies

The idea that shift work might influence breast cancer risk drives from the hypothesis of Stevens in 1987, that light exposure at night might affect breast cancer risk by hormonal mechanism, many studies since then done based on this hypothesis like Pukkala et al 1999, investigate the association between breast cancer incidence and degree of visual impairment, result suggest reduce breast cancer in visually impaired worker, Davis et al 2001, the result of the study provide evidence that indicator of exposure to light at night may be associated with the risk of developing breast cancer. Schernhammer et al in 2001, he investigates the effect night work in breast cancer, suggesting that women who work on rotating night shift with at least three nights per month,

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appear to have a moderately increased risk of breast cancer. In 2006 Schernhammer et al studies breast cancer incidence among nurses, and found out that those who work in rotating night shift for more than 20 years had a 79% higher risk of developing breast cancer, than nurses who did not work nights.

Discussion

Breast cancer risk is industrialized societies, and increases as developing countries become more Westernized. The reasons are poorly understood. The effect of night light on the prevalence of breast cancer emerged in the last 18 years as possible occupational risk factor was based on the fact that night light reduces the reduction of melatonin which produce by the pineal gland at night, in turn induce continuous production of estrogen involved in breast carcinogenesis.

Pukkala et al,1999 conduct cohort study to investigate the inverse association between breast cancer incidence and degree of visual impairment in Finland on total of 10935 women with impairment and followed up for cancer through the Finnish cancer registry for years 1983-1996, in this study the dose –response relationship between visible light and risk cancer, the result suggested that blind women as opposed to sighted women, at minimal risk of developing breast cancer.

In case control study by Davis et al 2001(2), the report indicate that breast cancer risk was increased among subjects who frequently did not sleep during the period of the night when the melatonin levels are typically at highest was based on in- person interviews with 814 breast cancer patients and 793 control subjects.

Graveyard shift work (defined as beginning work after 7:00 pm and leaving work before 9:00 Am) was associated with a 60%increase in breast cancer risk and with trend of increasing number of years of work or with more hours per week of graveyard shift work .Furthermore, Davis et al found that independently of shift work status, women who frequently do not sleep during the period of night when melatonin

levels are typically at their highest have 14% increase in breast cancer risk for each night per weak . Finally, there was an indication of increase risk among subjects with brightest bedrooms, but there was no association with interrupted sleep accompanied by turning on light. The strength of this study is the detailed collection of information on exposure, including sleep patterns, bedroom environments, shift work.

The prospective cohort study by Schernhammer et al in 2001,this cohort was followed from 1988 through1998,in this study they examined relationship between breast cancer and working on rotating night shift during 10 years of follow-up ,the uses data from the Nurses' health study , in which 78562 women in 1988 responded to question regarding how many years they had worked rotating night shift ,nurses who had performed night shift work between 1 and 29 years showed an 8% increase in relative risk of breast cancer ,and nurses with at least 30 years of night shift work show a30% increase in relative risk , the conclusion of this study was women who work on rotating night shift with at least three nights per month ,in addition to days and evening in that month , appear to have a moderately increase of breast cancer after extended periods of working rotating night shift.

Although these well conducted studies have different epidemiologic designs (each with its own strengths) and with result pointing in the same direction, the studies are complementary. These studies are pointing to light, as possible culprit for breast cancer.

While causal links between shift work and cancer development are not established, consistency, biogrident and biobusibility have been proven in many studies. Even more epidemiological studies are needed and more evidence need to be collected, occupational risk of night shift on developing breast cancer need to be conceders on health organization.

In developing countries, especially in KSA with the industrial and development revolution and with

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accelerating number of working women, shift work become social demand, mainly in hospitals where it's become part of medical worker schedules. hospital administrators do not realize that shift work is occupational risk with many negative impact on worker physical, social and psychological aspect.

Conclusion

Biography

Ibtisam Alharbi is a consultant restorative in Prince Sultan Medical Military City in Riyadh.

Breast cancer risk is increasing in developing countries as they become more weastrinized. The reasons are poorly understood. One possibility is circadian disruption from aspect of modern life which include the demand for shift work among women. Studies support this possibility by many evidence relating increase of incidence of breast cancer to night shift works.