

Effects of Risk Factors on Prognostic Determinants of Female Breast Cancer Patients at National Cancer Institute, Maharagama: A Retrospective Study

T.W. Uyanahewa^{1*}, D.D.D. Chathuranga¹, R.D.D.S. Ranaweera¹,
S.R. Kamburapolage² and J.K.M.B. Jayasekara¹

¹*Department of Medical Laboratory Science, Faculty of Allied Health Sciences,
Sir John Kotelawala Defence University, Ratmalana 10390, Sri Lanka*

²*National Cancer Institute, Maharagama 10280, Sri Lanka*
**uhthara@gmail.com*

A gradual increase of breast cancer incidences among female population was observed in Sri Lanka and several features have been identified as risk factors for breast cancer. Prognostic determinants as Estragon Receptors (ER), Progesterone Receptors (PR), Human Epidermal growth factor Receptor2 (HER2), Ki67, lymphovascular invasion, sites of metastasis and Nottingham grading are exploited to estimate the growth fraction of the breast cancer mass. The aim of our study is to determine the effects of breast cancer risk factors on predetermined prognostic characteristics of female breast cancer patients. We conducted a retrospective analysis of 406 female breast cancer patients, registered from year 2016 to 2018, at National Cancer Institute, Maharagama. The correlations and association among risk factors as age, Body Mass Index (BMI), Body Surface Area (BSA), clinical history, family history and menopausal status and prognostic determinants of patients were evaluated. Age was positively correlated with ER expression ($r=0.186$, $P<0.01$) and PR ($P<0.01$), while over-expression of HER2 was associated with the menopausal status ($P<0.05$) of patients. BMI and BSA did not show any correlation with prognostic determinants. Compared with the year 2016, the distribution of Diabetic Mellitus (21.8% to 33.3%) and hypertension (30.4% to 38.3%) was increased. Post-menopausal category among breast cancer patients have been increased to 66.9% in the year 2018. Research based on Sri Lankan population in 2017 and 2018 have revealed that majority of breast cancer patients were found among 40–50 ages and post-menopausal category. The results of the current study indicated that female breast cancer patients at higher ages tended to express more ER and PR than young, aged patients and pre-menopausal breast cancer patients could be more aggressive in prognosis due to high expression of HER2 and low expression of ER and PR as they are in younger ages.

Keywords: Breast cancer, Risk factors, Prognostic determinants