Survey of Patients with Cervical Cancer in Hospital Universiti Sains Malaysia: Survival Analysis with Time-Dependent Covariate

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Abstract: Background: Cervical cancer is the third most common cancer among women in Malaysia. The objective of this study was to estimate the effect of explanatory variables on survival time of cervical cancer patients receiving treatment at a hospital in Malaysia.

Methods: In this retrospective record review study, cervical cancer data obtained from Hospital Universiti Sains Malaysia (HUSM) was analysed. The data comprises of 120 patients who had been diagnosed as cervical cancer between 1st July 1995 and 30th June 2007, and obtained treatment from the hospital. The outcome variable was survival time (in months) from cervical cancer diagnosis to death. A stratified Weibull model was applied to study the effect of explanatory variable on survival time when there was time-dependent covariate in the model.

Results: Stage of disease and metastases were important prognostic variables. However, metastasis had been stratified because this variable did not satisfy the proportional hazard assumption. In without metastasis stratum, patients who were diagnosed at stage III & IV are at 2.30 times the risk of death as those in stage I & II. Meanwhile, in with metastasis stratum, patients in stage III & IV group had 3.53 times the hazard faced by patients in stage I & II.

Conclusion: The prognosis of cervical cancer patients was dependent upon the stage at diagnosis, after the stratification of the metastasis variable. A poorer prognosis on survival was observed for patients in stage III & IV than those in stage I & II.

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