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Investigating Predictors for in-patient length of stay and discharge destination in stroke ward, Princess Margaret Hospital

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Introduction

The prevalence rate of stroke rapidly increases as population is aging. And stroke is one of the costly diagnoses resulting in prolonged hospital admission in Hospital Authority. Accurate prediction of the Length of stay (LOS) in in-patient rehabilitation ward and discharge destination may help multi-disciplinary rehabilitation team to make an early and realistic discharge plan in order to reduce the financial cost of post-stroke rehabilitation.

Objectives

To investigating the predictors of in-patient LOS and discharge destination in stroke rehabilitation in PMH for early discharge planning.

Methodology

It was a retrospective study. 73 subjects with stroke were recruited during the period from 13 Apr to 12 May, 2015. Predictors including age, gender, Mini-Mental Status Examination (MMSE), Modified Barthel Index (MBI) and the Functional Test for the Hemiplegic Upper Extremity (FTHUE) were collected. The outcome measures were length of stay (LOS) and discharge destination which was dichotomous by Home against Private Old Age Home (POAH).

Result

Results: 1. The mean LOS was 28.9±28.66 days. Most of the patients (81.7%) were discharged to home. An analysis procedure named Data Mining was processed. The Auto Classifier could correctly stratify into 2 clusters for the discharge placement. The decisional C&R tree concluded the following: The characteristics of Majority group for Home placement are MBI >45 on admission and MMSE >17. The characteristics of Minority group for Home placement are MBI≤45 on admission and age ≤73.5. The characteristics of Majority group for POAH placement are MBI ≤45 on admission and Age>73.5. The characteristics of Minority group for POAH placement are MBI >45 on

admission and MMSE ≤ 17 . 2. SPSS was used for analysis. Patients who were with higher MBI score ($p=0.011$) on admission and higher FTHUE ($p=0.011$) tended to have shorter LOS. 3. Individually, FTHUE ($p=0.001$), MMSE ($p=0.004$), MBI on admission ($p<0.001$) and discharge ($p=0.01$) were the significant predictors of discharge destination. 4. After adjusting the above factors, it was found that the MBI ≤ 45 on admission (OR=3.10; 95% CI: 0.003 to 0.743) and MMSE ≤ 17 (OR=2.11; 95% CI: 0.017 to 0.870) were significant predictors for POAH placement. The model with solely these 2 predictors could correctly predict the discharge placement with 85.7%. Conclusions: These findings could provide a useful information and reference for health care providers in making a realistic treatment planning. Early discharge planning together with an earlier carer training with compensatory approach should be considered for those patients in these categories. The present results should be consolidated by recruiting more subjects in future study.