Queue-based modelling and detection of parameters involved in stroke outcome

We designed a queue-based model, and investigated which parameters are of importance when predicting stroke outcome. Medical record forms have been collected for 57 ischemic stroke patients, including medical history and vital sign measurement along with neurological scores for the first twenty-four hours of admission. The importance of each parameter is identified using multiple regression combined with a circular queue to iteratively fit outcome. Out of 39 parameters, the model isolated 14 which combined could estimate outcome with a root mean square error of 1.69 on the Scandinavian Stroke Scale, where outcome for patients were 36.75 ± 10.99. The queue-based model integrating multiple linear regression shows promising results for automatic selection of significant medically relevant parameters.