

Decision Tree Analysis of Risk Factors for Intravenous Infiltration among Hospitalized Children: A Retrospective Study

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Abstract : This retrospective study was aimed to identify risk factors of intravenous (IV) infiltration for hospitalized children. The participants were 1,174 children for test and 424 children for validation, who admitted to a general hospital, received peripheral intravenous injection therapy at least once and had complete records. Data were analyzed with frequency and percentage or mean and standard deviation were calculated, and decision tree analysis was used to screen for the most important risk factors for IV infiltration for hospitalized children. The decision tree analysis showed that the most important traditional risk factors for IV infiltration were the use of ampicillin/sulbactam, IV insertion site (lower extremities), and medical department (internal medicine) both in the test sample and validation sample. The correct classification was 92.2% in the test sample and 90.1% in the validation sample. More careful attention should be made to patients who are administered ampicillin/sulbactam, have IV site in lower extremities and have internal medical problems to prevent or detect infiltration occurrence.

Keywords : decision tree analysis, intravenous infiltration, child, validation

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