

Polypharmacy and medication regimen complexity index in transfusion-dependent thalassaemia patients

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ABSTRACT

Introduction: Thalassaemia is one of the most common genetic disorders in Malaysia. Over 50% were transfusion dependent, and the complex nature of thalassaemia management leads to poor clinical outcomes. This study aims to evaluate the polypharmacy and medication-related complexity index (MRCI) and their clinical implications. **Methods:** This was a cross-sectional observational study involving transfusion-dependent thalassaemia (TDT) patients. Patients were interviewed and medical records were reviewed retrospectively. The receiver operating characteristic curve analysis was used to determine the MRCI cut-off value and logistic regression analysis was conducted. **Results:** 200 patients were enrolled at a mean age of 31.0 (SD 9.35) and 44.5% (n= 89) of the patients had good control of their serum ferritin level (less than 2500 µg/ L). The median MRCI score was 20.25 (Interquartile range, IQR 13.25-26.00) with TDT-specific medications accounting for 64.2% of the total MRCI score. At the MRCI cut-off point of 17.5 (Area Under Curve= 0.722; sensitivity of 73.3% and specificity of 62.0%), 64.5% (n=129) of TDT patients had high MRCI and 73% (n=146) had polypharmacy. Only patients with high-level MRCI were associated with drug-related problems (Adjusted Odds Ratio= 4.450; 95% CI 1.63, 12.38). Drug-related problems (DRP) in turn led to increased odds of suboptimal control of serum ferritin level (Adjusted Odds Ratio= 21.24; 95% CI 6.97-64.69). **Conclusion:** Polypharmacy and high MRCI were prevalent in TDT patients. Future interventions that target both the detection and reduction of MRCI and DRP may be useful to improve serum ferritin control.