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DevelopmentandValidationofa PredictionModelfortheCureof PeritonealDialysis-Associated Peritonitis:AMulticenter ObservationalStudy

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Objectives : Peritoneal dialysis (PD)-associated peritonitis (PDAP) is a severe complication of PD. It is an important issue about whether it can be cured. At present, there is no available prediction model for peritonitis cure. Therefore, this study aimed to develop and validate a prediction model for peritonitis cure in patients with PDAP.
Methods : Patients with PD who developed PDAP from four dialysis centers in Northeast China were followed up. According to the region of PD, data were divided into training and validation datasets. Initially, a nomogram for peritonitis cure was established based on the training dataset. Later, the nomogram performance was assessed by discrimination (C-statistic), calibration, and decision curves.
Results : Totally, 1,011 episodes of peritonitis were included in the final analysis containing 765 in the training dataset and 246 in the validation dataset. During the follow-up period, peritonitis cure was reported in 615 cases from the training dataset and 198 from the validation dataset. Predictors incorporated in the final nomogram included PD duration, serum albumin, antibiotics prior to admission, white cell count in peritoneal dialysate on day 5 (/μl) ≥ 100/μl, and type of causative organisms. The C-statistic values were 0.756 (95% CI: 0.713–0.799) in the training dataset and 0.756 (95% CI: 0.681–0.831) in the validation dataset. The nomogram exhibited favorable performance in terms of calibration in both the training and validation datasets.
Conclusions : This study develops a practical and convenient nomogram for the prediction of peritonitis cure in patients with PDAP, which assists in clinical decision making.