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Does surgical difficulty relate to severity of acute cholecystitis? Validation of the Parkland grading scale based on intraoperative findings

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Introduction : The Parkland grading scale was assessed to validate its correlation to severity of acute cholecystitis.

Methods : This study investigated the correlation between the Parkland grading scale and Tokyo guidelines using multinomial logistic regression analysis in 177 patients with acute cholecystitis.

Results : High Parkland grading scale grades were related to higher C-reactive protein ($p < 0.001$) and frequent gangrenous cholecystitis ($p < 0.001$). The Parkland grading scale and Tokyo guideline grades correlated with statistical significance ($p < 0.001$). Patients with Parkland grading scale Grade 4 had a higher risk of moderate acute cholecystitis than those with Grade 3 (odds ratio: 4.4; 95% confidence interval [CI]: 1.2-15.6; $p = 0.019$). The Parkland grading scale showed good predictive power for moderate or severe acute cholecystitis (area under the curve: 0.771; 95% CI: 0.700-0.842; $p = 0.031$).

Conclusions : The Parkland grading scale is helpful to discriminate severity of acute cholecystitis. Patients with Parkland grading scale Grade 4 or 5 have a high risk of moderate or severe acute cholecystitis.

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