

氏 名	金井 哲也
学位 (専攻分野)	博 士 (医学)
学 位 記 番 号	千大院医薬博甲第医 1 4 8 3 号
学位記授与の日付	平成 3 0 年 3 月 3 1 日
学位記授与の要件	学位規則第 4 条第 1 項該当
学 位 論 文 題 目	A clinical predictive score for postoperative myasthenic crisis (重症筋無力症術後クリーゼ予測スコアの確立)
論 文 審 査 委 員	(主査) 教 授 清水 栄司 (副査) 教 授 吉野 一郎 教 授 巽 浩一郎 客員教授 Mark Bix

## 論 文 内 容 の 要 旨

### [Purpose]

Myasthenia gravis (MG) is an autoimmune disease mostly caused by autoantibodies against acetylcholine receptor (AChR) associated with thymus abnormalities. Thymectomy has been proven to be an efficacious treatment for patients with MG, but postoperative myasthenic crisis often occurs and is a major complication. We aimed to develop and validate a simple scoring system based on clinical characteristics in the preoperative status to predict the risk of postoperative myasthenic crisis.

### [Methods]

We studied 393 patients with MG who underwent thymectomy at six tertiary centers in Japan (275 patients for derivation and 118 for validation). Clinical characteristics, such as gender, age at onset and operation, body mass index, disease duration, MG subtype, severity, symptoms, preoperative therapy, operative data, and laboratory data, were reviewed retrospectively. A multivariate logistic regression with LASSO penalties was used to determine the factors associated with postoperative myasthenic crisis and score was assigned. Finally, the predictive score was evaluated using bootstrapping technique in the derivation and validation group.

### [Results • Discussion]

Multivariate logistic regression identified three clinical factors for predicting postoperative myasthenic crisis risk: (1) vital capacity < 80%, (2) disease duration < 3 months, and (3) bulbar symptoms immediately before thymectomy. The postoperative myasthenic crisis predictive score, ranging from 0 to 6 points, had areas under the curve of 0.84 (0.66 – 0.96) in the derivation group and 0.80 (0.62 – 0.95) in the validation group.

### [Conclusion]

A simple scoring system based on three preoperative clinical characteristics can predict the possibility of postoperative myasthenic crisis.

## 論文審査の結果の要旨

In the study on postoperative myasthenia gravis, the candidate investigated predictive score using multivariate logistic analysis with LASSO penalty in order to weight the risk factors. The risk factors, bulbar palsy, short disease duration, and low vital capacity are easy to understand, because these factors were reported in past study. The most significant point in this study is simple score system, meaning it is very useful in clinical situation. However, the problem in this score is low positive predictive value. Although positive predictive value is relatively low, the expected risk of postoperative myasthenic crisis increases as the score elevated.

Furthermore, the candidate should verify whether additional treatment before thymectomy should be done or not in high score group in future prospective study.

We approve this study suggesting that the simple scoring system can predict the possibility of postoperative myasthenia gravis crisis is academically meaningful and significant.