1475. Hamsi scoring in the prediction of unfavorable outcomes in tuberculous meningitis: Results of multinational Haydarpasa-2 Study

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Background. The course of tuberculous meningitis is quite problematic since half of patients faces either permanent sequelae or mortality. Thus, predictive scoring of unfavorable outcome is of paramount importance in clinical decision making in TBM. Accordingly, we designed this multinational study, which provided the largest case series with microbiological confirmation ever known in the literature.

Methods. A total of 43 centers from 14 countries (Albania, Croatia, Denmark, Egypt, France, Hungary, Iraq, Italy, Macedonia, Romania, Serbia, Slovenia, Syria, and Türkiye) submitted data of confirmed TBM patients hospitalized between 2000 and 2012. Unfavorable outcome was defined as survival with significant sequel or death. To develop a risk score predicting unfavorable outcome, binary logistic regression models were constructed via 200 replicates of database by bootstrap resampling methodology. The final model was build according to the selection frequencies of variables. The severity scale included variables with arbitrary scores proportional to the predictive powers of terms in the final model. The final model was internally validated by bootstrap resampling.

Results. A total of 507 patient data were submitted among which 165 were presented unfavorable outcome. Eighty-six patients died while 119 sequelae were detected in 79 (16%) patients. The full model included 13 variables and finally age, nausea-vomiting, altered consciousness, hydrocephalus, vasculitis, immunosuppression, diabetes mellitus and neurological deficit remained in the final model. Arbitrary scores between one to three were assigned to the variables in the severity scale. The severity index (HAMSI) included scores between one to six. The distribution of mortality for the scores 1-6 were 3.4%, 8.2%, 20.6%, 31%, 30% and 40.1%, respectively.

Conclusion. Altered consciousness, diabetes mellitus, immunosuppression, neurological deficits, hydrocephalus, and vasculitis predicted the unfavorable outcome in HAMSI scoring and the cumulative score provided a linear estimation of prognosis. Consequently, we provided a strong model in the prediction of TBM outcome and accordingly.

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