

VAL 67 – Illness Marker as a prognostic tool in intensive care unit: a prospective study

OBJECTIVE: Illness marker (IM) is a measurement obtained from multifrequencial bioelectrical impedance analysis (MBIA). It seems to stand for a general indicator of sickness as a functional marker of cell membrane. It's not very known if it plays any role as mortality marker in several clinical conditions like Intensive Care Unite (ICU) patients. **The objective of this study is to evaluate the usefulness of IM measurement as a prognostic tool in an ICU population in a prospective study.**

SUBJECTS / METHODS: Eighty five patients (57.7% male, aged 59.9 ± 20.2 years) were evaluated in a longitudinal way, when admitted to the ICU in an University Hospital. Multifrequency bioelectrical impedance analysis (MBIA) was performed (QUADSCAN[®], Bodystat) in every morning, at the same time, in all patients, until discharge or death. Illness marker was obtained from the ratio between 200 kHz and 5 kHz impedances. Apache score was obtained in the first 24 hours in ICU. The final patients' outcome (discharge from the hospital or death) was also evaluated. IM values were compared between survivors and patients who died during ICU or hospital stay. ROC curves were used to compare the prognostic value of IM and APACHE to predict the death during ICU or hospital stay. All the analyses were performed using STATA 9.2.

RESULTS: Most of the patients were clinical (64.7%), and 15.4% had cancer. The median ICU and hospital were 5 and 19.5 days, respectively. The mortality during ICU stay was 28.2% (24 patients). It was found a weak ($r = 0.24$) but significant correlation ($p = 0.03$) between initial IM and APACHE score. Initial IM and APACHE were significantly higher in patients who died than patients who were discharged from ICU (0.85×0.82 , 24.6×15.2 , respectively). The final IM was also significantly higher in patients who died (0.88) than in those who were discharged (0.80) from ICU. ROC curves showed that both APACHE and initial IM have a similar performance to predict death during ICU stay ($AUC = 0.79 \times 0.67$, respectively, $p = 0.12$) or hospital stay ($AUC = 0.74 \times 0.71$, respectively, $p = 0.64$).

CONCLUSION: The performance of IM from MBIA as a prognostic tool was comparable to APACHE in this sample of ICU patients. Futures studies may determine the best IM cut-off value to be used in this population.

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