MIMIC-III database

MIMIC-III is a large, freely available database comprising de-identification of health data associated with over forty thousand patients who stayed in critical care units of the Beth Israel Deaconess Medical Center between 2001 and 2012. The database includes information such as demographics, vital sign measurements made at the bedside (~1 data point per hour), laboratory test results, procedures, medications, caregiver notes, imaging reports, and mortality (including post-hospital discharge).

MIMIC supports a diverse range of analytic studies spanning epidemiology, clinical decision-rule improvement, and electronic tool development. It is notable for three factors: it is freely available to researchers worldwide; it encompasses a diverse and very large population of ICU patients; and it contains highly granular data, including vital signs, laboratory results, and medications.

Based on the MIMIC-III database, Yi et al. firstly described the dissimilarities in survival probability, mortality, and neurological recovery among mainstream treatments for intracerebral hemorrhage; secondly, patient classification was determined by important clinical features; and outcome variations among treatment groups were compared. The 28-day, 90-day, and in-hospital mortality in the craniotomy group were significantly lower than minimally invasive surgery (MIS) and non-surgical group patients; and, the medium/long-term mortality in the MIS group was significantly lower than the non-surgical group. The craniotomy group positively correlated with short-term GCS recovery compared with the MIS group; no difference existed between the non-surgical and MIS groups. The craniotomy group's 90-day survival probability and short-term GCS recovery were superior to the other two treatments in the subgroups of first GCS 3-12; this tendency also presented in the MIS group over the non-surgical group. For milder patients (first GCS > 12), the three treatment regimens had a minimal effect on patient survival, but the non-surgical group showed an advantage in short-term GCS recovery. Craniotomy patients have lower mortality and a better short-term neurological recovery in an ICH population, especially in short-to-medium term mortality and short-term neurological recovery over MIS patients. In addition, surgical treatment is recommendable for patients with a GCS ≤ 12. [1)].

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