Risk Factors for Death or Severe Disability in Comatose Patients

Overview: The presence of certain risk factors in comatose patients shortly after the onset of coma is associated with poor outcome (severe disability or mortality) within 2 months. Patient evaluation is performed on day 3 after onset of coma.

Etiologies of coma in study population:

- include: cardiac arrest cerebral infarction or intracerebral hemorrhage hypoglycemia

- excluded: trauma drug intoxication thyrotoxicosis or myxedema operative complication hypothermia diabetic ketotic coma nonketotic hyperosmolar coma hepatic encephalopathy secondary to uremia secondary to hyper- or hypo-calcemia secondary to hyper- or hyponatremia

Independent Risk Factor	Odds Ratio	95% CI
abnormal brain stem response	3.2	1.3 - 8.1
absent verbal response	4.6	1.8 - 11.7
absent withdrawal to pain	4.3	1.7 - 10.8
creatinine >= 132.6 µmol/L (1.5 mg/dL)	4.5	1.8 - 11.0
age >= 70 years	5.1	2.2 - 12.2

where:

- abnormal brain stem function is indicated if one or more of the following are present: (1) absent pupillary response (2) absent corneal response (3) absent or dysconjugate roving eye movements

- neurologic signs incompatible with abnormal brain stem function: (1) verbal response with inappropriate words or better (2) motor response of obeying verbal commands or localizing to pain (3) eye opening spontaneously or to verbal command

prognostic score = SUM(risk factors present)

Interpretation:

- minimum number of risk factors = 0

- maximum number of risk factors = 5

- The more the number of risk factors the greater the chances for a poor outcome.

- The presence of either an abnormal brain stem response or absent motor response to pain is associated with a 96% chance of severe disability or death at 2 months.

Number of Risk Factors Present	Mortality at 2 Months
0	26%
1	47%
2	60%
3	90%
4	96%
5	100%

from Table 4 page 1846 total sample data

References:

Hamel MB Goldman L et al. Identification of comatose patients at high risk for death or severe disability. JAMA. 1995; 273: 1842-1848.