Narayan's Logistic Model to predict the probability of poor or good outcome in patients with coma

Overview: Narayan's logistic model uses multivariate analysis to predict the probability of poor or good outcome in patients with coma.

Predictor	Value	Coefficient
age in years	same	0.061
Glasgow Coma Score	same	(-0.469)
pupillary reaction to light	0 (normal or unilaterally absent) or 1 (bilaterally absent)	1.545
oculocephalic or oculovestibular responses eye movements	0 (normal) or 1 (impaired or absent on either or both sides)	0.611
surgical mass	0 (absent) or 1 (present)	0.765

probability of poor outcome= (1 / (1 + (e ^ ((-1)*((sums of (value * coefficient)) - 0.674)))))

probability of good outcome = 1 - (probability of poor outcome)

where:

• 0.674 is the line intercept

• poor outcome indicates severe disability vegetative state or death

• good outcome indicates good recovery or moderate disability

Limitations:

• Prediction is most accurate for patients at the extremes

• Prediction is least accurate for patients in the mid-range

• Patients with gunshot wounds to the head were excluded

References:

Contant CF Jr Narayan RK. Chapter 74: Prognosis after head injury. pages 1792-1812. IN: Youmans JR. Neurological Surgery Fourth Edition. WB Saunders Company. 1996.

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