Serum levels of S-100β correlate with the clinical status and severity of hypoxic-ischemic encephalopathy in neonates

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ABSTRACT. The clinical significance of serum S-100β levels in neonates with hypoxic-ischemic encephalopathy (HIE), as a reference index to assess HIE severity, was evaluated in this study. On the basis of our strict inclusion and exclusion criteria, relevant high-quality case-control studies reporting the association between HIE and S-100β protein were selected from electronic database searches. The STATA version 12.0 software was used for the statistical analyses. The database search initially retrieved 93 studies (37 in English and 56 in Chinese), and following a multistep screening process, 13 high-quality studies were eventually included in our meta-analysis. The 13 case-control studies included a total of 646 HIE neonates and 381 healthy controls. The results of this meta-analysis revealed that serum S-100β levels in mild, moderate, and severe HIE

neonates were significantly higher than those in healthy controls, and the differences were statistically significant. Importantly, the serum S-100β levels increased incrementally with HIE severity. Our results support the hypothesis that S-100β is an important biological indicator of HIE and serum S-100β levels can be used as a reference index to assess HIE severity.

Key words: S-100β protein; Hypoxic-ischemic encephalopathy; Meta-analysis

