Peran S100B serum sebagai prediktor derajat keparahan trauma kepala pada anak = The role of serum S100B as predictor of severity in pediatric traumatic brain injury / Lies Dewi Nurmalia

Lies Dewi Nurmalia, author

Abstrak

ABSTRAK
Latar Belakang. Biomarker dapat digunakan untuk memprediksi derajat keparahan trauma kepala.

Tujuan. Mengetahui hubungan antara kadar S100B dengan derajat keparahan trauma kepala dan kelainan CT scan kepala.

Metode Penelitian. Penelitian potong lintang di IGD RSUPN Cipto Mangunkusumo, RSUP Fatmawati, dan RS Permata Cibubur selama Juli-Desember 2015. Subjek adalah anak usia 1-18 tahun yang mengalami trauma kepala dengan onset <24 jam. Setiap subjek dilakukan pemeriksaan skor Skala Koma Glasgow Pediatrik, pemeriksaan CT scan kepala bila terdapat indikasi, serta pemeriksaan kadar S100B dari serum.

Hasil Penelitian. Subjek penelitian terdiri atas 20 subjek trauma kepala ringan dan 18 subjek trauma kepala sedang. Hasil penelitian menunjukkan terdapat perbedaan bermakna kadar S100B kelompok trauma trauma kepala sedang dan kepala ringan; median (rentang) 0,173 (0,054-0,812) μg/L dibandingkan 0,067 (0,039-0,084) μg/L, p<0,001. Selain itu juga terdapat perbedaan bermakna antara kelompok yang terdapat kelainan CT scan kepala dibandingkan dengan yang tidak ada kelainan; 0,124 (0,051-0,812) μg/L dan 0,067 (0,039-0,084) μg/L, p=0,001. Berdasarkan analisis ROC, kadar S100B serum sangat kuat untuk memprediksi trauma kepala sedang (AUC 0,818, p=0,001 dan IK95% 0,668-0,969) dengan nilai cut-off 0,083 μg/L.

Simpulan. Kadar S100B serum pada trauma kepala sedang secara bermakna lebih tinggi dari trauma kepala ringan serta memiliki kemampuan diskriminasi sangat baik untuk memprediksi derajat keparahannya.
<hr><i>ABSTRACT
Background. Biomarker has ability to predict the severity of TBI and abnormal CT scan.

Objectives. To determine the association between S100B level with the severity of pediatric TBI and intracranial injury.

Methods. A cross-sectional study at Emergency Department of RSUPN Cipto Mangunkusumo, RSUP Fatmawati, and Permata Cibubur Hospital on July- December 2015. Subjects were 1-18 year-old children with TBI, onset within 24 hours before admission. We measured Pediatric GCS score, serum S100B level, and performed cranial CT scan if indicated.

Results. Twenty subjects had mild TBI and 18 subjects had moderate TBI were included. S100B levels were

higher in children with moderate TBI as compared to children with mild TBI; 0,173 (0,054-0,812) μg/L vs 0,067 (0,039-0,084) μg/L, p<0,001. S100B levels were significantly elevated in children following TBI with abnormal cranial CT scan as compared to children with a normal CT scan (0,124 (0,051-0,812) μg/L vs 0,067 (0,039-0,084) μg/L, p=0,001). AUC for S100B was also significant (0,818, p=0,001, CI95% 0,668-0,969) as prediction of moderate TBI with cut-off point 0,083 μg/L.

Conclusions. Children with moderate TBI had significantly higher S100B levels as compared to children with mild TBI. Cut-off point S100B level at 0,083 μg/L has good ability to predict the severity of TBI.</i>