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Intra-Arterial Heparin Flushing Improve Cerebral Blood Perfusion in Ischemic Stroke Patients: A Report from Cerebrovascular Center Indonesia Army Central Hospital Gatot Soebroto (rspad)

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Background: Indonesian Basic Health Research Study (RISKESDAS) indicate that prevalence of stroke is 12.1%; and is considered as one of the major cause of death in Indonesia. It has been reported that ischemic stroke shown about 80-85% of the total cases. Conventional ischemic stroke management has indicated some major obstacles in the stroke management program; therefore an approach using intra-arterial heparin flushing method has been used to overcome the above limitations. Controversy has been around for sometimes, therefore 2 groups of scientific forum have been established InaCVF (Indonesia CerebroVascular Forum) and InaDOCAR Prevent (Indonesia DOCAR Prevent) to find out the scientific rational in the management of ischemic stroke using intra-arterial heparin flushing. The objective of this approach is for recovering the cerebral blood perfusion at the optimal time.
Methods: March 2013 – March 2014, there has been 4380 cases of ischemic stroke, and only 2146 (48.9%) undergone intra-arterial heparin flushing guided with digital subtracted angiography (3D-DSA). Prior to the heparin-flushing procedure, all patients are undergone functional MRI test and the patients are carefully selected for the optimal result. Post procedure, the patients undergone functional MRI. The pre and post functional MRI results are compared to determine the change of cerebral blood perfusion.
Results: Of 2146 ischemic stroke patients, undergone intra-arterial heparin flushing, none of the patients had severe complication. Sixty-six percent, 32%, and 2% have significant moderate and little improvement respectively. Further biochemical parameters is still under investigation to elucidate the pathomechanism.
Conclusions: Intra-arterial heparin flushing in patient with ischemic stroke is a promising and effective modality.

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Prognostic Factors in Cholinesterase Inhibitor Poisoning

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Background: Organophosphate poisoning and carbamates are potent cholinesterase inhibitors that have a high mortality. The aim of this study is to investigate the prognostic factors affecting survival in patients with cholinesterase inhibitor poisoning (CIP).
Methods: This study included 92 patients with CIP from January 2005 till August 2013. We divided these patients into two groups (survivors vs non-survivors), compared clinical characteristics, and analyzed the predictors of survival.
Results: The mean age of the included patients was 56 years (range, 16-88). The patients included 57 (62%) men and 35 (38%) women. Comparing clinical characteristics between survivor group (n=81, 88%) and non-survivor group (n=11, 12%), there were no differences in renal function, pancreatic enzyme, and serum cholinesterase level except serum bicarbonate level and APACHE II score. The serum bicarbonate level was lower in non-survivors than in survivors (12.45 ± 2.84 vs 18.36 ± 4.73). The serum APACHE II score was higher in non-survivors than in survivors (24.36 ± 12.07). The development of pneumonia during hospitalization was higher in non-survivor than in survivor (n=9, 82% vs n=31, 38%). In multiple logistic regression analysis, serum bicarbonate concentration, APACH II score, pneumonia during hospitalization were the important prognostic factors in patients with CIP.
Conclusions: Serum bicarbonate and APACHE II score are useful prognostic factors in patients with CIP. Furthermore, pneumonia during hospitalization was also important to predict the prognosis in patients with CIP. Therefore, prevention and aggressive treatment of pneumonia is important in treatment of patients with CIP.

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Increase in Mean Platelet Volume is Associated with Mortality in Patients with Severe Sepsis or Septic Shock

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Background: Mean platelet volume (MPV) is suggested as an index of inflammation and disease activity in addition to reflecting the efficacy of anti-inflammatory treatment in chronic inflammatory disorder patients. However, the prognostic value of MPV on mortality remains unclear in patients with severe sepsis.
Methods: We prospectively enrolled 345 patients admitted to the emergency department (ED) who received standardized resuscitation for severe sepsis and/or septic shock between Nov. 2007 and Dec. 2011. The change in MPV between hospital admission and 72 hours after treatment (ΔMPV72h-adm) was evaluated as a prognostic factor for 28-day mortality. Linear mixed model and Cox proportional hazards analysis were used.
Results: The mean age of the enrolled patients was 64.2±15.7 years, 169 (49.0%) of them were males. Thirty-five (10.1%) patients died within 28 days after ED admission. During the first 72 hrs of ED admission, MPV significantly increased in both non-survivors ($P = 0.001$) and survivors ($P < 0.001$) compared to baseline. ΔMPV72h-adm was significantly higher, indicating an increase in MPV during the first 72 hours, in non-survivors compared to survivors ($P = 0.003$). However, the change in the number of platelets over the first 72 hours did not differ significantly between the two groups ($P = 0.360$). Multivariate analysis revealed that ΔMPV72h-adm was an independent predictor of 28-day mortality, even after adjusting for age, sex, body mass index, Sequential Organ Failure Assessment score, renal replacement therapy, platelet count, C-reactive protein level, albumin level, and lactate level (hazard ratio, 1.44; 95% confidence interval, 1.01–2.06; $P = 0.044$).
Conclusions: An increase in MPV during the first 72 hours of hospitalization could be an independent risk factor for adverse clinical outcomes in severe sepsis