Poster Abstracts

PO-81

THE VALIDATION OF ASPARTATE AND ALANINE AMINOTRANSFERASE FOR PREDICTING HEPATOTOXICITY FROM ACUTE PARACETAMOL OVERDOSE

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Objective

Paracetamol overdose is a common reason for emergency room visits and mainly causing for liver injury. The purpose of this study is to validate of aspartate(AST) and alanine aminotransferase(ALT) for predicting hepatotoxicity from acute paracetamol overdose.

Method

We conducted a retrospective observational study of medical records in patients who were admitted for treatment of acute paracetamol overdose in Siriraj hospital during January 2003 to December 2008.All of the patients had paracetamol level above 150-treatment line. All of the patients had completed N-acetylcysteine(NAC)regimen and checked for liver function test before given NAC and followed until discharge. Abnormal liver function test in female was defined by serum AST>32 U/L or serum ALT>33 U/L.Abnormal liver function test in male was defined by serum AST>40 U/L or serum ALT>41U/L.We followed for the outcomes of acute liver injury and hepatotoxicity. Acute liver injury was defined by serum ALT≥150 U/L and hepatotoxicity was defined by serum ALT$\geq$1,000 U/L.

Result

From 458 patients, 114 were include in this study. Hepatotoxicity occurred 12.3%.Acute liver injury occurred 43%.There was not a statistically relationship between hepatotoxicity or acute liver injury and age, sex , weight or underlying disease. Only abnormal serum AST and ALT had statistically relationship between hepatotoxicity or acute liver injury; p value<0.01.For hepatotoxicity,AST had 0.714(0.454-0.883)sensitivity, 0.84(0.756-0.899) specificity, 0.385(0.224-0.575) positive predictive value(PPV) and 0.955(0.889-0.982) negative predictive value(NPV).For hepatotoxicity,ALT had 0.714(0.454-0.883) sensitivity, 0.86(0.779-0.915) specificity, 0.417(0.454-0.883)PPV, 0.956(0.891-0.983)NPV.For acute liver injury,AST had 0.429(0.3-0.567) sensitivity, 0.923(0.832-0.967)specificity, 0.808(0.621-0.915)PPV and 0.682(0.579-0.77)NPV. For acute liver injury ALT had 0.347(0.229-0.487)sensitivity, 0.892(0.794-0.947)specificity, 0.708(0.508-0.851)PPV and 0.644(0.542-0.736)NPV. The area under ROC curve values for predicting hepatotoxicity showed no statistical significance (0.850 for AST vs 0.823 for ALT; p=0.513). The area under ROC curve values for predicting acute liver injury showed no statistical significance (0.731 for AST vs0.674 for ALT ; p=0.057)

Conclusion

AST and ALT had no statistically difference in predicting hepatotoxicity or acute liver injury from acute paracetamol overdose. AST and ALT had a high NPV for predicting hepatotoxicity from acute paracetamol overdose.