

## Oral Abstracts

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#### OBESITY: A RISK FACTOR OF ACUTE LIVER INJURY FROM ACUTE ACETAMINOPHEN OVERDOSE

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**Objectives:** Increased risk of hepatotoxicity has been shown in acute acetaminophen overdose patients with body weights more than 100 kg. We evaluate whether obesity is associated with increased risk of hepatotoxicity and acute liver injury (ALI) in acute acetaminophen overdose.

**Methods:** This is a retrospective cohort study to compare risk of hepatotoxicity and acute liver injury among obese (BMI $\geq$ 30) and normal BMI (BMI $\leq$ 24.9) patients with acute acetaminophen overdose at Siriraj Hospital, Bangkok, Thailand during January 2004 to June 2012. All patients were treated with N-acetylcysteine (NAC) based on initial acetaminophen concentration above the 150 mg/L at 4 hour line in the Matthew-Rumack Nomogram. Demographic data, data on acetaminophen ingestion, acetaminophen concentration, NAC therapy, aminotransferase concentrations and clinical outcomes were collected. Psi ( $\Psi$ ) parameters, a composite parameter of timed-acetaminophen concentration and NAC onset were calculated. High  $\Psi$  is defined as  $\Psi$  of 5.0 mM/L. Hepatotoxicity means aminotransferase of 1000 U/L or higher. ALI is diagnosed if aminotransferase doubles the baseline level or achieves 150 u/L. Data were analyzed by logistic regressions.

**Results:** We enrolled 173 cases, consisting of 35(20.2%) obese and 138(79.8%) normal BMI cases. Mean(SD) age were 24.8(8.4) years. One hundred and forty-nine (66.8%) of them were female. Obesity group had significantly higher  $\Psi$  than the normal BMI group. Otherwise, there were no significant differences in demographic parameters, initial aminotransferases, timed acetaminophen concentrations and onsets of NAC between the obese and normal BMI cases. Hepatotoxicity and acute liver injury developed in 22(12.7%) and 95(54.9%) cases, respectively. Multivariate logistic regression revealed obesity and high  $\Psi$  as significant risk factors of ALI, with odds ratios(95% CI) of 2.66 (1.66 to 6.08) and 14.97 (4.34 to 51.76), respectively. Only high  $\Psi$  was the significant risk factor of hepatotoxicity with odds ratio(95% CI) 13.31 (3.89 to 45.47).

**Conclusion:** Obesity is an independent risk factor of acute liver injury in cases of acute acetaminophen overdoses. Prolonged N-acetylcysteine therapy are more likely to be indicated in acute acetaminophen overdose patients if they are obese.