

Encephalopathy Due to Ammonia Intoxication in Hepatic Failure

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OBJECTIVE: To determine if the encephalopathy of Reye's syndrome is related to hepatic failure.

DESCRIPTION: Blood ammonia (BA) levels were studied in 40 cases of Reye's syndrome.

PROGRESS: Blood ammonia was elevated (above $0.1 \mu\text{M NH}_4^+$ per ml) on admission in 32 cases. In 22 cases, the admission BA was above $0.2 \mu\text{M/ml}$ and in 17 above $0.3 \mu\text{M/ml}$. BA levels ranged from $.025 \mu\text{M/ml}$ to $.095 \mu\text{M/ml}$ in 20 hospitalized controls.

There were eleven survivors. Seven of eight patients with a normal admission BA and an additional patient with only marginal elevation survived. Of the 3 survivors with definite elevation of BA, 2 regained consciousness immediately after receiving intravenous glucose.

The highest BA levels were found in the most deeply comatose patients. In all instances where serial determinations were possible, the level of BA fell following admission. Many patients expired even though the BA level fell to normal or nearly normal levels.

In thirteen patients treated with glucose-saline cleansing enemas, no effect was demonstrated either on BA level or survival.

SUMMARY: This study demonstrates a relationship between the BA level and encephalopathy in Reye's syndrome. These observations indicate that the encephalopathy of Reye's syndrome is probably secondary to hepatic dysfunction.

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