
Abstract:
BACKGROUND: The cost-effectiveness of albumin-based fluid support in patients with septic shock is currently unknown.

METHODS: In a simulation study, we compared standard medical practice and systematic 20% albumin infusion. The study population consisted of patients with septic shock admitted to one of the 28 ICUs belonging to the Cub-Réa regional database between 1st January 2014 and 31st December 2016. Cost estimates were based on French diagnosis related groups and fixed daily prices. Estimation of mortality reduction relied on ALBIOS trial data documenting a Risk Ratio of 0.87 in a non-preplanned subgroup of patients with septic shock. Life expectancy was estimated with follow up data of 184 patients with septic shock admitted in year 2000 in the same ICUs. Several sensitivity analyses were performed including a one-way Deterministic Sensitivity Analysis (DSA) and a Probabilistic multivariate Sensitivity Analysis (PSA).

RESULTS: 6406 patients were included. In the base-case scenario, the mean live years gained with albumin was 0.49. The mean extra cost of using albumin was €480 per year. The cost per year gained was €974. Sensitivity analyses confirmed the robustness of the results. The probability of albumin being cost effective was 95% and 97% for a threshold fixed at €20,000 and €30,000 per life year saved, respectively.
CONCLUSION: On the basis of the risk reduction observed in the septic shock subgroup analysis of the ALBIOS dataset, the application of the ALBIOS trial results to Cub-Rêa data may suggest that albumin infusion is likely cost-effective in septic shock.

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