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Title **Extracorporeal Liver Support of Liver Failure by Means of Prometheus® System**

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Aim

To assess the medical efficacy and safety of extracorporeal albumin dialysis using the Prometheus® system to treat liver failure.

Conclusions and results

Six case series and 5 randomized clinical trials were selected. No cost-effectiveness studies on this technology were identified. Many of the included studies had methodological limitations, which hindered rigorous recommendations about the effectiveness of this technique in treating liver failure. Data were insufficient to assess the impact of the Prometheus® system on survival. In general, no serious adverse effects were described, with the exception of thrombocytopenia, minor bleeding, and circuit leakages. The Prometheus® system led to a drop in mean arterial pressure, probably due to the distribution of the patients' own albumin within the secondary circuit. This system has the capacity to purify both albumin-bound and water-soluble substances, since clearances are significantly higher compared to treatment with MARS®. We observed significant decreases in the levels of bilirubin, bile acids, ammonium, creatinine, and urea without a significant improvement in the grade of hepatic encephalopathy.

Recommendations

Uncertainty continues to surround the effectiveness of the Prometheus® system in treating acute and acute-on-chronic liver failure. This technology must be considered an experimental treatment modality until more data are available about the different aspects of liver failure.

Methods

We reviewed the scientific literature published from January 1999 to March 2009, searching the following databases: MEDLINE, EMBASE, Health Technology Assessment (HTA), Database of Abstracts of Reviews of Effectiveness (DARE), National Health Service Economic Evaluation Database (NHSEED), Cochrane Library Plus, Clinical Trials Registry, and Health Services Research Projects in Progress (HSPROJ). From among the papers identified in the bibliographic search, we selected only those that met a series of selection criteria. The data were then extracted and the evidence summarized.

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