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Meta-analysis of subcutaneous versus intravenous epoetin in maintenance treatment of anemia in hemodialysis patients.

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Comment in:

- [Am J Kidney Dis. 2002 Sep;40\(3\):662-3.](#)
- [Am J Kidney Dis. 2003 Jan;41\(1\):266-7; author reply 267.](#)
- [Am J Kidney Dis. 2003 May;41\(5\):1122; author reply 1122.](#)

Abstract

BACKGROUND: Clinical and pharmacokinetic studies have shown that target hemoglobin or hematocrit levels can be maintained using a reduced recombinant human erythropoietin (epoetin) dosage by switching from intravenous (IV) to subcutaneous (SC) administration.

METHODS: We conducted a meta-analysis of comparative studies of epoetin administered IV versus SC to assess the relative costs of these administration routes. Twenty-seven prospective clinical studies involving 916 patients were included in the analysis. The average difference between IV and SC doses of epoetin and average difference in drug costs between administration routes were determined.

RESULTS: The average reduction in dose in patients treated with SC versus IV epoetin was 48 IU/kg/wk ($P < 0.001$), representing an average annual cost savings with SC administration of US \$1,761 +/- \$1,080 (SD) per patient. The difference between SC and IV doses was similar in both parallel- and crossover-design studies. A retrospective US survey showed a dose reduction of 26 IU/kg/wk ($P < 0.001$) with SC administration, translating to an annual savings of \$946 per patient.

CONCLUSION: This study indicates that the cost of epoetin is reduced substantially when administered SC in comparison to IV. Recommendations of current US and European guidelines, which encourage the use of SC administration, not only have a sound rationale in terms of efficacy and safety, but also have a sound economic basis.

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