A meta-analysis of the relative doses of erythropoiesis-stimulating agents in patients undergoing dialysis

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Background. Erythropoiesis-stimulating agents (ESAs) such as epoetin alfa and beta, and darbepoetin alfa have improved the management of anaemia secondary to chronic kidney disease. Numerous studies have reported a dose reduction when patients receiving dialysis were converted from epoetin to darbepoetin alfa using the starting dose conversion of 200:1 as indicated on the prescribing label by the European Medicines Agency. The objective of this meta-analysis was to summarize the existing body of scientific evidence to evaluate the potential dose savings when comparing epoetin alfa or beta to darbepoetin alfa. Method. Medline and EmBase were searched to identify all published trials investigating ESA treatment in anaemic patients receiving dialysis and converted from epoetins to darbepoetin alfa. We selected prospective randomized controlled, non-randomized and observational studies involving patients on dialysis that compared epoetin and darbepoetin alfa dosing. Results. Of 573 articles identified, 9 studies met the eligibility criteria and were included in our analysis. The overall percentage dose savings attained when dialysis patients were converted from epoetin to darbepoetin alfa was 30% (range: 4% 44%). Greater dose savings were noted with intravenous administration (33%) compared with subcutaneous (27%) and between switch-over studies (31%) and RCTs (27%). In all studies, target haemoglobin levels were maintained before and after conversion. Conclusion. This meta-analysis demonstrates that when using an initial 200:1 conversion ratio, as indicated on the European label, from epoetin to darbepoetin, a subsequent reduction in dose was observed and an average 30% dose savings could be achieved.

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