INTRAVENOUS OR SUBCUTANEOUS ADMINISTRATION OF ERYTHROPOIETIN (rHu-EPO) : WHAT TO CHOOSE ?

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It is generally claimed that the dose of rHu-EPO required is smaller when administered by subcutaneous route (SC) than by intravenous one (IV). However, an editorial criticizes this statement and stressed the point that most comparative studies have not been performed in steady state conditions.

The rHu-EPO required to obtain a 30% hematocrit level was studied in 25 chronic hemodialysed patients treated succesfully for at least one year by SC rHu-EPO and shifted to the IV road. The mean weekly dose required was estimated on two three months periods. The data were compared to 22 patients who remained treated by IV rHu-EPO during the whole observation period to detect seasonal or incidental variation of rHu-EPO needs.

Although the mean EPO dose show a 22% increase, this difference does not reach significance level due to a high variability between the patients. Further analysis however show a very significant increase in the dose required in the patients receiving low doses of rHu-EPO during the subcutaneous period (67±26 U/kg/w by SC versus 130±59 by IV) whereas in patients receiving high doses no significant change was observed (182±97 vs 162±128 U/kg/w).

	SC	IV	p*
Dose (U/kg/w)	122 ± 90	146 ± 98	NS
Hb (gr%)	9.84 ± 0.87	10.12 ± 0.57	NS
Hct (%)	30.06 ± 2.50	32.00 ± 2.04	0.003
Nbr RBC ($x10^6/mm^3$)	3.39 ± 0.42	3.41 ± 0.46	NS
Reticulocytes (%)	2.31 ± 0.79	2.68 ± 0.96	NS
Ferritin (ng/ml)	71.8 ± 35.1	73.4 ± 38.2	NS

* t Student for paired data NS:>0.05

To conclude, the administration of rHu-EPO by IV lead to a 20% increase but it is only significant for patients receiving less than 100 U/kg/w of recombinant human erythropoietin.