

## Comparison of the effect of carnitine singly and in combination with nanderolone decanoate in the treatment-of the anemia on chronic hemodialysis patients

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**Background and Aims:** Anemia is a common complication of chronic kidney disease, particularly in patients who are on dialysis. The use of recombinant human erythropoietin has led to the suppression of severe anemia in the dialysis population. Androgens were first used in dialysis during the 1970's for the treatment of chronic renal failure anemia as the only alternative to transfusion therapy. A few studies have suggested that the effect of nandrolone decanoate, the most commonly used androgen, may be similar to that of recombinant human erythropoietin (rHuEPO) therapy alone. The aim of this study was the evaluation of the effect of nanderolone decanoate individually and in combination with carnitine in chronic renal failure patients.

**Methods:** Twenty six patients with hemoglobin under twelve were selected. In group one, twelve patients had received oral carnitine 500mg per day with irregular rHuEPO. In second group 14 patients had received oral carnitine 250mg twice a day and 25mg nanderolone decanoate per week with irregular rHuEPO.

**Results:** In first group there isn't a significant increase in serum hemoglobin and hematocrit levels,  $P_v < 0.999$  and  $P_v < 1.000$  respectively. But in second group there was significant effect in increasing both hemoglobin and hematocrit with  $P_v < 0.01$  for both of them.

**Conclusions:** Recent studies have reconsidered the use of nanderolone decanoate in uremic patients and the use of nanderolone decanoate should be considered as a valid alternative to rHuEPO, enhancing response to rHuEPO and reducing dose requirement in chronic renal failure patients. Further studies will be required to state the beneficial effects of this type of treatment.

**Keywords:** Anemia; Hemodialysis; Erythropoietin; Nanderolone; Carnitine