

# Erythropoietin therapy and the Cardiovascular Outcome In Cardio-Renal Syndrome patients

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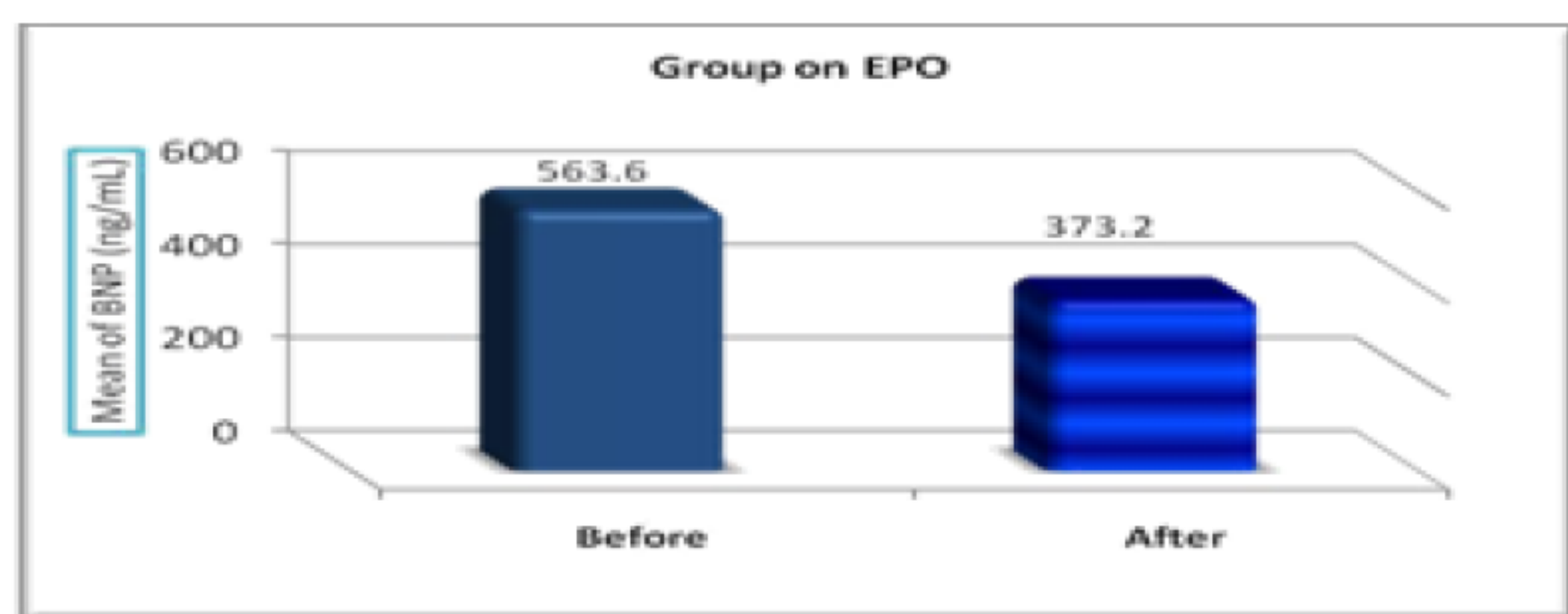
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## OBJECTIVES

**Aim of the work was** to investigate the value of erythropoietin therapy in the treatment of CRS patients with anemia and anemic heart failure and to evaluate the relationship between clinical, echocardiography and serum BNP levels in those patients compared to the standard therapy as iron supplement and blood transfusion.

## METHODS

The prospective study included 30 chronic renal failure patients under dialysis who are presented with anemic heart failure diagnosed according to New York Heart Association (NYHA) classification which was proved by echocardiographic finding (EF-FS). Plasma BNP was measured at the beginning and at the end of the study after three months on erythropoietin therapy . patients were divided into (group 1) was treated with erythropoietin 4000 unites twice weekly and (group 2) was receiving standard treatment in the form of blood transfusion and iron (group 2).



**Figure (1):** Mean of BNP before and after 3 months of intervention with erythropoietin for treatment of anemia

Comparison between groups of the study regarding different variables after treatment of both groups:

Variables	Group I Mean ± SD	Group II Mean ± SD	% changes & P. value	Sig.
Hb	8.864 ± 1.4959	8.420 ± 1.1767	-5% 0.380	NS
UREA	101.09 ± 19.916	96.53 ± 28.271	-4.5% 0.622	NS
Creatinine	9.500 ± 2.109	7.460 ± 1.469	-21.5% 0.005	S*
BNP	373.214 ± 192.013	406.600 ± 142.893	8.9% 0.432	NS
EF%	59.86 ± 6.758	59.53 ± 7.492	-0.5% 0.904	NS
FS%	34.06 ± 4.017	33.60 ± 3.602	-1.3% 0.745	NS
LVED	5.586 ± .533	5.293 ± 0.884	-5.2% 0.295	NS

## RESULTS

It was found that in group -1 , Six cases improved after erythropoietin therapy and so changed from class 3 to class 2. Two cases also improved after erythropoietin therapy and so changed from class 2 to class 1. Finally ,we can say that 8 cases improved and moved to a better NYHA class and this represents 53.3 % improved cases of EPO cases of the study and represent 26.6% of total cases. Group - 2 on traditional therapy like blood transfusion ,iron got no remarkable improve in myocardial functions detected by non significant decreased BNP level by 17.5% but worse echo changes detected by significant decreased EF% by 9.7%, non significant decreased FS by 3.2 % and significant increased LVES by 9,4%.concerning Hb non significant increased level by 1.2% Also two cases deteriorated after traditional treatment and so one case changed from class 3 to c a 4 and the other ca e changed from c a 2 to c a 3 while the remaining 13 ca e didn't change. Finally we can say that, no cases improved and transmitted to better NYHA class after traditional treatment and that represent 0 % of total cases while there were 2 cases deterioration that represent 13% of this group and 6.5% of total cases in the study

## CONCLUSIONS

In this study EPO treatment reduced BNP levels in patients with cardio-renal anemia syndrome. The correction of anemia by EPO treatment appears to be able to improve clinical outcome in this subset of patients with heart failure, detected by significantly decreased BNP level by 33.8% in comparison to non significant decreased BNP level by 17.5% but worse echo changes detected by significant decreased EF% by 9.7%, in population exposed to standard therapy

## Referencies

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