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Journal of Chemical and Pharmaceutical Research

J. Chem. Pharm. Res., 2010, 2(4):588-593

ISSN No: 0975-7384
CODEN(USA): JCPRC5

Adult hemodialysis patients with end-stage renal disease and erythropoietin treatment of the relation between hypertension

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ABSTRACT

Anemia is a common complication of chronic renal failure patients, the prevalence increases with decreased renal function. This is reported in patients with normochromic, normocytic anemia. However, the reasons are multifactorial, the main factor comorbidity rate of iron deficiency and erythropoietin deficiency. End-stage renal disease (ESRD) from the process stage of anemia in ESRD has been increasing and is growing in depth. This article ***aim*** *anemia epo treatment of patients diagnosed with ESRD and evaluate the situation, the relationship between the frequency of anti-hypertensive drug use manifest. Treated in our dialysis center and included in this study, the monthly average of all 73 patients, three sessions per week and admitted that at least four hours each session, is composed of adult individuals. The study, between January 2009 and October 2009 including 10 months retrospectively periyotu capable. Possible blood loss during treatment in our unit have undergone special training for all staff. Blood samples of Fe - epo treatment practices at the earliest, after 3 weeks and was taken as prehemodiyaliz. According to the results of hemoglobin and the use of antihypertensive medication patients, divided into three groups. Epo applications in our unit, except for a few exceptions, patients were subcutan. Study on the preparations, epoetin alfa, epoetin beta 50-150 iu / kg / wk rHuEPO and darbepooetin alpha half-life of the people once a week for as long 0.25-0.75 g / kg administered in the form. The results were as follows: anti-hypertensive drug utilization rates in the treatment of anemia in patients with blind, being treated for anemia (Hb <12g/dl) anti-hypertensive drug utilization rates in patients with serious difference between the month of March were excluded. In March, the approximately equal values increased. Epo-treated patients (Hb <11g/dl) 10-month basis, while 37% of the total incidence of HT, epo therapy in patients with blind 10-month prevalence of 21% of HT have been identified as the base. No statistically significant difference between these two values are (P = 0.001 <0.05). Epo treatment with anti-hypertensive drug use booster contribution rate, to work with once again been put forward. Get out of Epo in the treatment of this effect is seen most preparate epoetin beta, although the increase in HT was thought by other pathogens was considered that this difference is not significant.*

INTRODUCTION

Total red cell mass of the navigation system plays an important role in regulating erythropoietin. 90% of all of erythropoietin in normal kidneys, while the rest are mainly in the liver. Erythropoietin is a glycoprotein of 34,000 molecular weight. Construction is not known exactly where in the kidney, probably secreted by the renal tubule epithelial cells. Tubule cells of peritubular capillaries can not provide enough oxygen because of anemic blood, so that the stimulated production of erythropoietin. Hypoxia as well as in other parts of the body, not the kidneys, some of the sensors is non-renal (epinephrine, norepinephrine, and some prostaglandins) signals that are stimulated by the release of erythropoietin. The stronger the effect of erythropoietin on red blood cell production 'that the low oxygen atmosphere bulunulunca environments, begin to rise within minutes of erythropoietin (8.10). Effectiveness of iron in these processes, not only for making hemoglobin, the body is important in the construction of other elements (eg, myoglobin, cytochromes, peroxidase, catalase, ...). 4-5 grams total amount of iron in the body, the approximately 65% hemoglobindedir. Iron is used to determine the status of the most important concentration of serum ferritin and transferrin saturation percentage of the two tests. However, these two tests is not sufficient to assess iron deficiency in patients with ESRD. Instead of performing the test according to the results of intravenous iron therapy, response to rHuEPO therapy should be considered. Iron must be related to the tests should be done after two weeks of intravenous iron administration. The symptoms of anemia in patients with end-stage renal failure, and reduced oxygen, hemde increased cardiac output depends on the compensatory changes. The most obvious symptoms of anemia, fatigue, and dyspnea. Considering the difficulties of treatment of patients with ESRD how this situation affects the quality of life can be understood more clearly. Anemia is the depth increases, dizziness, lack of concentration, cold intolerance (type patients, even üşürler temperature), sleep disorder symptoms such as palpitation due to increased cardiac output and heart rate occurs sıçrayıcı. Subsequently hemostatic disorders, immune dysfunction, perception, and sexual disorders occur. On the other hand, retrospective studies of anemia in hemodialysis patients, especially under 10g/dl suggest that life expectancy is associated with (1,2,4). For a patient is full of iron stores in anemic ESRD from other causes or, thought to be due to a lack of erythropoietin rHuEPO treatment of anemia should be initiated. Both the European Best Practice Guidelines'da as well as the K / DOQI target Hgb values of instructions for the treatment of anemia in 11-12 g / dl (Hct 33-36%) is proposed. To achieve these goals, the adequacy of hemodialysis with erythropoietin and iron therapy, if any, reasons to treat inflammatory and malnutrition by early diagnosis is very important to take the necessary precautions. In addition, rHuEPO therapy in patients with ESRD increased by 28% the use of hypertension drugs, considering that research, treatment of anemia is multifactorial, with much better understood.

MATERIALS AND METHODS

Institution "Private Konya Huzur Hemodialysis Center" provides treatment services to 73 patients per month. Although all adult patients in the center, volunteered for this study. Permits of three sessions per week and each session, patients received 4 hours of treatment had accepted rule. Epo blood samples of patients after 3 weeks and Fe preparate practices, taken as predialysis. Anemia is an important follow-up, hemodialysis artery - vein sets, and special attention was given to hrmodialysis filter blood loss. Possible blood loss during treatment in our unit have undergone special training for all staff. Epo preparations applied to capture the event, the maximum level subcutan had used, Fe intravenous (IV), applied to the preparations. The study, between January 2009 and October 2009 including 10 months retrospectively period capable. Study on the preparations, epoetin alfa, epoetin beta 50-150 iu / kg / wk rHuEPO and

darbepooetin alpha half-life of the people once a week for as long 0.25-0.75 g / kg administered in the form. However, the current practice of the procedure for each of the three preparate, Hb 11 g / dl and higher when the dose reduction of 25-50%, and higher when the discontinuation of treatment has been 12gr/dl hb. Ferritin in the patients and / or transferrin saturation (TSAT), the values were checked edited and treatment protocols, "TSAT <20% and / or ferritin <100 pq / L in the intravenous iron preperat, TSAT> 20% and / or ferritin> 100pq / L and Hb <10g/dl start the epo treatment "(Budget Application Instructions- 2008) principle has been noted. Both the European Best Practice Guidelines'da as well as the K / DOQI target Hgb values of instructions for the treatment of anemia in 11-12 g / dl (Hct 33-36%) suggested that the study has been accepted as target values.

RESULTS

According to the data obtained in this study, a total of 73 patients, according to the number of months and % of patients treated for HT assessment: January 46 patients (63%), February 54 patients (73%), March 39 patients (53%), April 40 patients (54 %), May 41 patients (56%), June 41 patients (56%), July 40 patients (54%), August 40 patients (54%), September 54 patients (73%), October 40 patients (54%) has been shaped. The total number of patients treated with Epo for months in these patients and evaluation of treatment of HT: January epo treatment using the patient 40 and HT 28 (70%), February 39 and HT treatment of patients using epo 32 (82%), March 45 and the patient using epo treatment of HT 20 (44%), April 39 and HT treatment of patients using epo 29 (74%), May 41 and HT treatment of patients using epo 28 (77%), June 41 and HT treatment of patients using epo 26 (65%), HT treatment of patients using epo July 40 and 27 (65%), August 40 and HT treatment of patients using epo 29 (63%), September 54 and the number of patients using epo treatment of HT 32 (84%), September 40 and the number of patients using epo treatment of HT 27 (77%) were in the form. Working in one of the important findings emerged from the data obtained, the epo-treated patients (Hb <11g/dl) 10-month basis, while 38% of the total incidence of HT, epo not therapy in patients with blind 10-month prevalence of 21% as the base in the HT was the detection. Statistically significant difference between these two values is quite striking (P = 0.001 <0.05).

Figure1: epoetin alfa, epoetin beta, darbepooetin alfa, treatment for hemodialysis numeral patients in 10 months

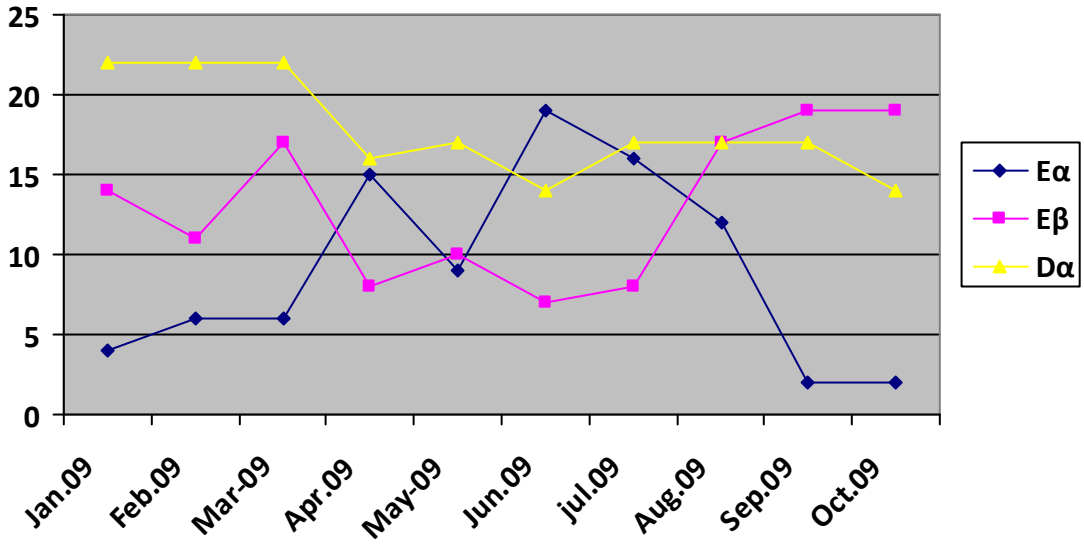
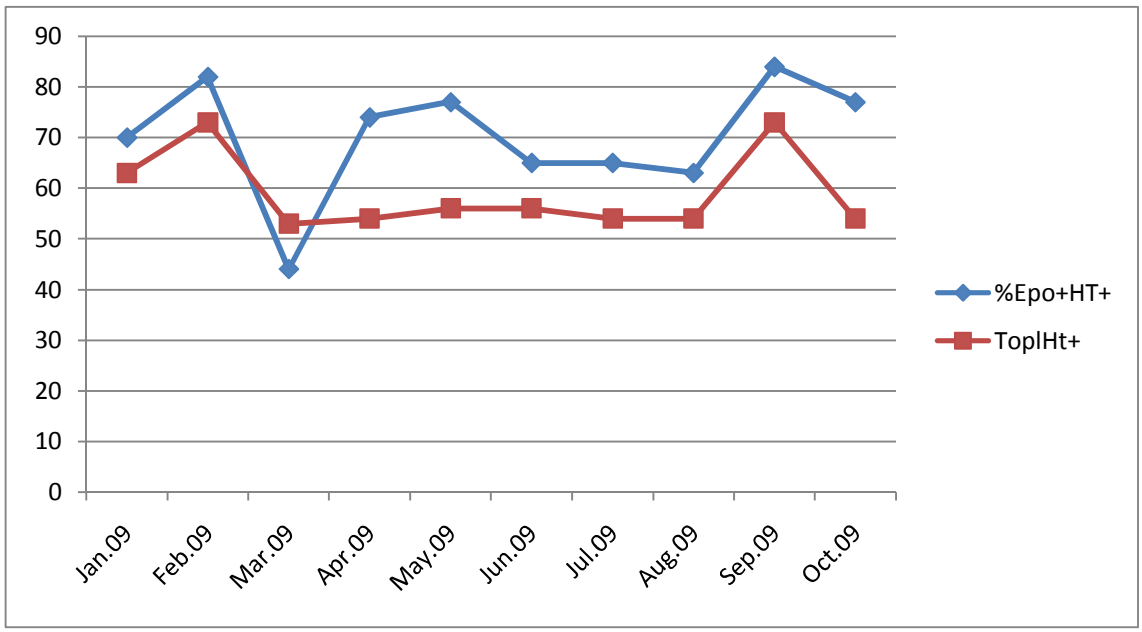


Figure1: Epo preparations used in the our hemodialysis center distributions are described by months. 10 monthly average values of % figures shown in the center as the most commonly used to treat anemia preparate darbepooetin alpha (44%), the second most common epoetin beta (33%), epoetin alfa is the third most frequent (23%) were used. Treatment preferences of patients and their medication before the elections they have been careful alignment of the centers used in the treatment of epo.

Table1: epo use numbers for months, but do not use epo-treated patients with hypertension, treatment of hypertension with patients on epo and all patients and all patients in the treatment of hypertension in those who see the treatment of Epo.

MONTHS	Eα Patients	Eβ Patients	Dα Patients	Epo – HT + Patients	Epo + HT + Patients	HT + Patients Total	Epo + Patients Total	Total Patients
Jan.09	4	14	22	18	28	46	40	73
Feb.09	6	11	22	22	32	54	39	73
Marc.09	6	17	22	19	20	39	45	73
Apr.09	15	8	16	11	29	40	39	73
May.09	9	10	17	13	28	41	36	73
Jun.09	19	7	14	15	26	41	40	73
Jul.09	16	8	17	13	27	40	41	73
Aug.09	12	17	17	11	29	40	46	73
Sep.09	2	19	17	22	32	54	38	73
Oct.09	2	19	14	13	27	40	35	73
Total	**91**	**130**	**178**	**157**	**278**	**256**	**399**	**730**

Figure2: % Value seen in patients using Erytropoetin HT and HT seen in patients % of total value of the comparison



DISCUSSION

Erythropoietin is produced in endothelial cells of normal people close to the renal tubes. Together with the loss of renal function, decreasing the production of EPO ekstrasekretuar to

show correlation with creatinine clearance decreases. Foley et al and Ma et al increase in mortality in hemodialysis patients with anemia associated with serious effects of the increase in the incidence of cardiac disease, suggesting that the first scientists (13,14). Karnofsky score, a variety of assessment tools, such as the SF-36 values in ESRD patients treated with rHuEPO, the increase in quality of life and function showed significant improvement (4,9,10). Epo, subcutan is in use for a longer half-life, low-dose and less than the cost of treatment is possible. For this reason, been preferred way sc clinic patients. Kaufman et al subcutan patients into their study the use of EPO, with minimal pain they feel have demonstrated that use small diameter needle (16). Epo, which appears in the treatment of hypertension, the increase is because of side effects firstly, not yet fully understood. Caravaca et their anti-thrombotic therapy to reduce the effect of rHuEPO have concluded that of the hypertensive (17). Bode-Boger his research colleagues, the vasoconstrictive – vasodilator prastonoids rate dose-dependent vasodilator, increased the norepinephrine vascular response and warned that the situation showed that the increase in endotein-1 synthesis (18).

CONCLUSION

Epo treatment with anti-hypertensive drug use booster contribution rate, to work with once again been put forward. Get out of Epo in the treatment of this effect is seen most preparate epoetin beta, although the increase in HT was thought by other pathogens was considered that this difference is not significant. Anemia in hemodialysis patients with multiple system is effective and no doubt a serious condition that should be followed up with treatment protocols. However, the study ', such as the emergence, caused by the increase in HT epo therapy should not be forgotten. The active use of other factors in the struggle to move from here of whom clinisiens anemia should be evaluated (diet, iron deficiency, gis losses, with sets of dialysis treatment blood loss ...). On the other hand, HT patients the increase in intra-dialitik should be noted that an important factor in weight control.

The results were as follows: anti-hypertensive drug utilization rates in the treatment of anemia in patients with blind, being treated for anemia anti-hypertensive drug utilization rates among patients with serious difference has been determined that, except in March. Not Epo-treated patients 10-month basis while 21% (157 Epo– HT+ patients, total 730 patients) of the total incidence of HT, epo therapy in patients with blind 10-month prevalence of 38% (278 Epo+ and HT+ patients, total 730 patients) of HT have been identified as the base. Statistically significant difference between these two values is quite striking ($P = 0.001 < 0.05$).

Acknowledgment
The authors thank Ilhan Gunaydın, Sadık Buyukbas, Ahmet Bal, Esef Bolat, and bioistatistician Ahmet Pekgor

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