

THE PREVALENCE AND RELATED FACTORS OF ABSENCE OF ANEMIA AMONG CHINESE CHRONIC HEMODIALYSIS PATIENTS: A MULTICENTER CROSS-SECTIONAL STUDY

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Objectives

Some chronic hemodialysis (HD) patients can maintain normal hemoglobin level without the need for erythropoiesis-stimulating agents (ESAs). But the prevalence and the factors associated with this condition in Chinese chronic HD patients have not been seen any reported. The aim of this multicenter cross-sectional study was to investigate clinical features, iron metabolism and other characteristics to survey the prevalence rate and the related factors of this condition among Chinese chronic HD patients.

Methods

Total 1318 chronic HD patients in Shenzhen city (Guangdong province, China) were included. The patients were classified into non-ESA group (n=11) and ESA group (n=1307). The r-HuEPO independence (non-ESA) HD patients were defined as hemoglobin greater than 12 g/dl for more than 6 months without r-HuEPO injection, blood transfusion or androgen therapy. Epidemiological and laboratory data were collected, renal sonography was also performed in each patient to evaluate renal and liver cysts formation and the number and the size of the cysts were recorded.

Results

About 0.84 % of all HD patients were r-HuEPO- independent in present study. In the non-ESA group, there was a higher proportion of men (79.6 vs. 58.3%), a longer duration of renal replacement therapy (RRT) (8.6 +/-6.1 vs. 5.1 +/-3.3 years), a higher prevalence of adult polycystic kidney disease (APKD) (46.3 vs. 9.7%), a higher prevalence of hepatitis C virus (HCV) liver disease (26.2 vs. 3.2%), $p = 0.01$, and the patients were older (63.3 +/-13.6 vs. 49.6 +/-13.5 years). Endogenous erythropoietin levels in non-ESA group were significantly higher than those in ESA group (61.8 +/-27.1 vs. 29.3 +/- 11.7 mU/ml). Non-ESA patients had a significantly higher number of renal (38.1 vs. 13.2%) and hepatic cysts (9.3 vs. 1.9%), and which were also larger in size (2.9 +/- 1.6 vs. 1.3 +/-0.3 cm) than those in ESA group. No significant difference in iron metabolism was found between two groups. In the multivariate Cox analysis, independent predictor factors for absence of anemia in these HD patients were number of renal cysts more than 6 cysts (95% CI 1.058-1.405; $p = 0.00$), endogenous erythropoietin levels (95% CI 1.139-1.361; $p = 0.05$), HCV+ liver disease (95% CI 1.129-1.316; $p = 0.01$) and time on RRT (95% CI 1.019-1.263; $p = 0.05$).

Conclusions

To our knowledge, this is the first report of the r-HuEPO independence among Chinese HD patients. The prevalence is much lower among Chinese chronic HD patients than that in reported literature. Factors contributing to this condition are complex and multiple. Its frequency is higher in men and older patients with long-term RRT, in patients with HCV+ liver disease and in APKD. It is associated with increased endogenous erythropoietin production and the presence of renal and hepatic cysts.

References

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