

3. Blood Diseases including Anaemia**Reference**

Aoe H, Takada K, Kawahara N, et al. Effectiveness of erythropoietin and ninjin'yoeito in preoperative autologous blood donation*. *Jikoketsu Yuketsu (Journal of Japanese Society of Autologous Blood Transfusion)* 1997; 10: 145–51 (in Japanese).

1. Objectives

Combined effect of erythropoietin and ninjin'yoeito (人参養榮湯) on anemia after autologous blood donation.

2. Design

Randomized controlled trial (RCT).

3. Setting

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4. Participants

Patients who donated 800 mL or more of blood for autologous transfusion between January 1994 and December 1996. The control group (iron preparation only) consisted of patients who donated blood for autologous transfusion between June 1992 and December 1993; treatment assignment was not randomized.

5. Intervention

Arm 1: iron preparation monotherapy (intravenous administration of 80 mg three times a week) (n=10).
 Arm 2: iron preparation (intravenous administration of 80 mg three times a week) + Epogin (6000 units three times a week) (n=37).
 Arm 3: iron preparation (intravenous administration of 80 mg three times a week) + Epogin (6000 units three times a week) + TSUMURA Ninjin'yoeito (人参養榮湯) Extract Granules (9 g/day) (n=26).

6. Main outcome measures

Blood tests (red blood cell count, hemoglobin, hematocrit, reticulocyte count, white blood cell count, and serum iron) before blood donation and before surgery.

7. Main results

Compared to patients in arm 1, patients in arm 3 but not arm 2 had significantly increased red blood cell count, hemoglobin, and hematocrit at the time of preoperative blood collection.

8. Conclusions

The addition of ninjin'yoeito to iron and erythropoietin preparations is considered to be effective in raising red blood count, hemoglobin, and hematocrit of blood donated for autologous transfusion.

9. From Kampo medicine perspective

None.

10. Safety assessment in the article

None.

11. Abstractor's comments

This paper describes the hematopoietic effect of ninjin'yoeito, which appears to be useful for improving the quality of blood units donated for autologous transfusion. Although significant differences were observed between arms 1 and 3 but not between arms 2 and 3, it may not simply be concluded that the addition of ninjin'yoeito is effective. However, considering the increasing numbers of patients who are undergoing autologous blood transfusion, this attempt should be appreciated. Including postoperative results in the evaluation of ninjin'yoeito would enhance another efficacy of this formulation. Further results are awaited.

12. Abstractor and date

Nakata H, 1 January 2009, 1 June 2010.