3. Blood Diseases including Anaemia

Reference

Motoo Y, Mouri H, Ohtsubo K, et al. Herbal medicine ninjinyoeito ameliorates ribavirin-induced anemia in chronic hepatitis C: a randomized controlled trial. *World Journal of Gastroenterology* 2005; 11: 4013-7. CENTRAL ID: CN-00522971, Pubmed ID: 15996025

1. Objectives

To evaluate the efficacy and safety of ninjin'yoeito (人参養栄湯) for ribavirin-induced anemia.

2. Design

Randomized controlled trial (RCT).

3. Setting

One university hospital, Japan.

4. Participants

Twenty-three chronic hepatitis C patients treated with interferon alpha-2b and ribavirin. Five of them withdrew from the study.

5. Intervention

Arm 1: designated "the NY group" and treated with IFNα-2b and ribavirin plus TSUMURA Ninjin'yoeito (人参養栄湯) Extract Granules (9 g, orally), n=10.
Arm 2: designated "the control group" and treated with interferon alpha-2b (IFNα-2b) and ribavirin,n=13

IFNα-2b was administered for a total of 24 weeks at a dose of 10 MU intramuscularly, 6 days per week for the first 2 weeks and 3 days per week for the following 22 weeks. Ribavirin was orally administered for 24 weeks at a dose of 800 mg/day (if the patient's body weight was ≥ 60 kg) or 600 mg/day (body weight < 60 kg).

6. Main outcome measures

Maximum increase in red blood cell count (maxΔRBC), maximum increase in hemoglobin level (maxΔHb) minimum hemoglobin level (min Hb), white blood cell count (WBC), platelet count (Plt), T-helper 1 cell (Th1) count, T-helper 2 cell (Th2) count, Th1/Th2, and glutathione peroxidase level in peripheral blood.

7. Main results

Peripheral maxΔHb and min Hb were significantly improved in the NY group (P=0.026 and P=0.079, respectively). No between-group differences were observed in maxΔRBC, WBC count, Plt count, Th1 count, Th2 count, Th1/Th2, and glutathione peroxidase level. Antiviral effects were not different, either.

8. Conclusions

Ninjin'yoeito is an effective and safe treatment for ribavirin-induced anemia.

9. From Kampo medicine perspective

None.

10. Safety assessment in the article

Adverse reactions specific to ninjin'yoeito were not observed.

11. Abstractor's comments

This study showed the efficacy of ninjin'yoeito for ribavirin-induced anemia. The authors speculated that the mechanism of action of this drug is the activation of undifferentiated erythroid cells and antioxidation.

12. Abstractor and date

Kogure T, 15 June 2007, 1 April 2008, 31 December 2013.