Report on treating bone marrow suppression after chemotherapy of acute leukemia with herbal product

Yi Xue Sheng

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From October 1996 to October 1998, we observed the therapeutic effect of treating bone marrow suppression after chemotherapy of acute leukemia with TCM medicine Yi Xue Sheng, now reported the results as follows.

Clinical data

1. Selection of cases

38 cases of acute leukemia, which was diagnosed by peripheral blood, bone marrow, histo-chemical stain examination. Cases with less than one month’s chemotherapy, or without complete remission after chemotherapy were not included.

2. General data

38 cases of acute leukemia were randomized into two groups according to the odd or even numbers of their admission date. In the 18 cases of the treated group, there’re 10 males, 8 females, aging from 14-66 years old with a median of 30 years old; 6 cases of acute lymphoid leukemia, 12 of acute non-lymphoid leukemia; 3 cases were recurrent cases, 4 cases were for consolidation after complete remission. 30
Chemotherapy courses were applied. In the 20 cases of the control group, there’re 9 males, 11 females, aging from 16-60 years old with a median of 28 years old, 8 cases of acute lymphoid leukemia and 12 cases of acute non-lymphoid leukemia; 4 were recurrent cases, 5 were for consolidation after complete remission, 28 chemotherapy courses were applied. There’s no significant difference between the data of the two groups, which were comparable.

Treating methods: Cases of acute lymphocytic leukemia were applied with VDCP or VDLP regimen (V: vincristine, D: daunorubicin, C: cyclophosphane, P: prednisone, L: L-asparaginase), cases of acute non-lymphocytic leukemia were applied with DA or HA regimen (A: adenine arabinoside, H: homoharringtonine). In the bone marrow suppression during or after chemotherapy, general supporting treatment were applied, ultraviolet radiation for room sterilization, tid, Duobeiershi Liquid for rinsing out the mouth qid, 1:5000 potassium permanganate for hip bath qn. Cases with fever were applied with cephalosporin antibiotics and aminoglycoside antibiotics, and adjusting antibiotics according to drug sensitivity test. Blood component or whole blood transfusion was applied if necessary. After chemotherapy, the bone marrow was suppressed, the whole blood cells decreased in peripheral blood. 18 cases in the treated group were given orally herbal product Yi Xue Sheng (produced by Ao Dong Zhu Hai Pharmaceuticals, Jin Lin Province,
consisting of niu gu sui 25g, lu xue 15g, zi he che 10g, lu rong 3g, e jiao 15g, lu jiao jiao 5g, gui ban jiao 10g, dang shen 15g, huang qi 20g, etc.

All drugs were decocted to be made into extractum, and then made into tablets, which were dried under low temperature. Each tablet contains 0.25g crude drug), 3 tablets, tid, till peripheral blood profile restored to normal (Hb>100g/L, WBC>4.0*10^9/L, BPC>100*10^9/L). Check bone marrow after each chemotherapy finished. Check the bone marrow again after the peripheral blood restored to normal. Each chemotherapy course was counted as 1 case.

**Results**

1. Change of the bone marrow and peripheral blood after chemotherapy All patients experienced bone marrow suppression after chemotherapy finished (proliferation decreased or seriously decreased, i.e. peripheral Blood: WBC≤2.0*10^9/L, BPC≤50*10^9/L, Among which, patients with WBC≤1.0*10^9/L took up 83.3% (25/30 cases) in the treated group, and 82.1% (23/28 cases) in the control group; patients with BPC≤20*10^9/L took up 66.7% (20/30 cases) in the treated group, and 64.3% (18/28 cases) in the control group.)

2. Time for bone marrow restoring hematogenic function in two groups

In 30 cases of chemotherapy in the treated group, the time of bone marrow restoring to active proliferation was 9-21 days, averagely
12.40±4.99 days, in 28 cases of chemotherapy of the control group, the
time of bone marrow restoring to active proliferation was 14-35 days,
averagely 17.70±6.00 days, there’s significant difference between the
bone marrow hematopoiesis restoring time of two groups (t=2.15,
P<0.05).

3. Complicated infections after chemotherapy in two groups
Complicated acute upper respiratory tract infection after
chemotherapy in the treated and control groups were 4 and 6 respectively;
acute bronchitis 3 cases each; pneumonia 2 and 3 cases; biliary tract
infections and urinary tract infections 2 each respectively; perianal
abscess 1 case and 2 cases; septicemia 1 case and 2 cases; the occurrence
rate of infections were 43.3% (13/30 cases) and 64.3 (18/28 cases)
respectively, the occurrence rate of infections in the treated group was
lower than that of the control group (X²=4.09, P<0.05).

4. Bleeding and blood transfusion in two groups  Bleeding in the
treated group and control group respectively were: skin bleeding 7 and 6
cases; nasal bleeding 2 and 3 cases; gum bleeding 1 and 2 cases; digestive
tract bleeding 2 and 3 cases, eye ground bleeding 1 and 2 cases; there
were also 2 cases of intracranial hemorrhage and 2 cases of urine
bleeding in the control bleeding. Bleeding rate were 43.3% (13/30 cases)
and 71.4% (20/28 cases) respectively; the bleeding rate of the treated
group was lower than that of the control group (X²=4.66, P<0.05). The
treated group and the control group had concentrated platelet transfusion 6 and 9 cases, concentrated RBC 14 and 18 cases; the blood transfusion times of the treated group was lower than that of the control group, but there’s no significant difference ($X^2=3.68$, $P>0.05$).

5. Toxic and side effects: There’s no toxic and side effects in the treated group which took Yi Xue Sheng.

Experiences

Combined chemotherapy is one main treating method for acute leukemia now. After chemotherapy there’s a bone marrow suppression, during which peripheral blood decreased obviously, patients may have anemia, bleeding and infections, which may lead to death in serious cases. Shortening bone marrow suppression period can prevent the occurrence of serious infections and bleeding, and thus to facilitate next treatment. TCM medicine Yi Xue Sheng had significant restoring effect on the lowering of WBC and platelet induced by cytotoxic medicine, increased bone marrow karyocytes. Administration of TCM medicine Yi Xue Sheng on the quit of chemotherapy could obviously shorten the bone marrow suppression period, decrease infection occurrence rate, lower bleeding rate and transfusion rate. TCM holds that chemotherapy reaction is induced by injury of qi, Blood and Fluid due to invasion of Toxic Evil, the main manifestations are symptoms of deficiency of both qi and yin including fatigue, dizziness, weakness of the waist and knees, tenderness
of bleeding, or red tongue, enlarged tongue body with tooth marks, fine and rapid pulse, etc. In Yi Xue Sheng formula, huang qi and dang shen could strengthen the Spleen and invigorate qi, e jiao, lu jiao jiao, gui ban jiao could nourish yin and Blood, niu gu sui, lu xue, lu rong could supplement Essence and increase marrow, could increase Blood. The combination of the medicine could strengthen the Spleen, generate Blood, invigorate Kidney and supplement Marrow. Clinical observation results proved that the application of TCM medicine Yi Xue Sheng could reduce the toxic and side effects of chemo agents, shorten bone marrow suppression period, and could improve the general conditions of patients, so as to guarantee the process of chemotherapy. Besides, no side effects were found, it can be a routine treatment for patients with leukemia after chemotherapy.