



CASE REPORT-ACUPUNCTURE TREATMENT FOR IMMUNITY IN PATIENT WITH CHRONIC MYELOGENOUS LEUKEMIA

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ABSTRACT

Chronic myelogenous leukemia is a hematopoietic disorder characterized by increased proliferation of granulocytes. The goal of the treatment of chronic myelogenous leukemia is hematologic, molecular and cytogenetic remission. The TCM treatment provides extended survival, increases the life expectancy, improves the quality of life, exerts a modulatory effect on the immune system and has a positive impact on molecular level in CML patients. In this article is presented a case of 31 year old woman, diagnosed with chronic myelogenous leukemia for 3 years. The patient came to the clinic because she wanted to get pregnant, but feared that the leukemia condition will worsen and the immune system will collapse, because of stopping taking the Imatinib medication. The patient has done 5 acupuncture treatments, once weekly, with duration of 30-45 minutes each side of the body. After 5 treatments the BCR-ABL values decreased from 0.33% to 0.077%, indicating that the body is responding well to the treatment and the immunity is better. Leukocytes decreased from extremely high levels to normal from 204.9 to 5.5x10³/ml. Thrombocytes decreased from 540 to 202x10³/ml. Acupuncture as part of the Traditional Chinese Medicine is a very helpful and effective treatment in chronic and long-lasting conditions. The treatment enhances the immunity in immune-related conditions and boosts the body's defenses and encourages the cells to reproduce.

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INTRODUCTION

Chronic myelogenous leukemia is a hematopoietic disorder characterized by increased proliferation of granulocytes. When the blood analysis is done it shows increased number of granulocytes. The disease has 3 phases: chronic, accelerated and blast phase and the progress of the disease changes through the phases. In the chronic phase, the patient may be asymptomatic or may have some of the symptoms: loss of energy, fatigue, weight loss, easy bruising and bleeding, recurrent infections, splenomegaly, hepatomegaly, increased white blood cell count and other. If the patient has chronic myelogenous leukemia, during the diagnosis it can be found Philadelphia chromosome (Ph1) in bone marrow cells and histopathologic findings in the peripheral blood. The goal of the treatment of chronic myelogenous leukemia is hematologic, molecular and cytogenetic remission.[1] [2] [3] Chronic myelogenous leukemia (CML), from a Traditional Chinese Medicine (TCM) point of view, represents a loss of blood and Qi, a deficiency in the Yin and Yang energy in the body that induces complicated imbalance between the cell growth and death.

It is also called “poisoned bone marrow”. In the TCM for the treatment of CML are used acupuncture and more than 60 types of herbs. The general way of treatment of CML is divided into four therapy groups:

1. Clearing the heat and cooling blood
2. Detoxification and relieving poisoning
3. Dispersing dampness and eliminating wind and
4. Supplementing the Qi and nourishing the Yin energy. [4]

The acupuncture treatment can regulate and improve the immune system very effectively and enhance the anti-stress and anticancer immune function and reinforce anti-inflammation effects. [5]

The TCM treatment provides extended survival, increases the life expectancy, improves the quality of life, exerts a modulatory effect on the immune system and has a positive impact on molecular level in CML patients. [3] [6]

Case report

In this article is presented a case of 31 year old woman, diagnosed with chronic myelogenous leukemia for 3 years. The patient was prescribed oral medication Imatinib (Gleevec),

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400g per day. The patient came to the clinic because she wanted to get pregnant, but feared that the leukemia condition will worsen and the immune system will collapse, because of stopping taking the medication. After 3 months of stopping the medication the BCR-ABL values increased from 0.27% to 0.33%.

The patient has done 5 acupuncture treatments in a clinic for Traditional Chinese Medicine and acupuncture in Skopje, RN Macedonia, by a doctor specialist in acupuncture. Treatments were done once weekly, with duration of 30-45 minutes each side of the body. In the treatment were used fine sterile disposable needles sized 0.25x25mm manufactured by Wuijiang City Medical & Health Material Co., LTD.

Acupuncture points used in the treatment are:GB34 (YangLingQuan), LR3 (TaiChong), LI4 (HeGu), DU14 (DaZhui), HN1 (SiShenCong), RN7 (QiHai), ST36 (ZuSanLi), SP9 (YinLingQuan), ST29 (GuiLai), SP6 (SanYinJiao), BL18 (GanShu), RN13 (ZhongWan), RN4 (GuanYuan), RN2 (QuGu), BL21 (WeiShu), GB20 (FengChi), ST25 (TianShu), BL25 (DaChangShu), BL19 (DanShu), BL20 (PiShu), and BL32 (CiLiao).

After 5 treatments the BCR-ABL values decreased for the first time from 0.33% to 0.077%, indicating that body is responding well to the treatment and the immunity is better. In table 1 are shown the results from the blood analysis done before and after the acupuncture treatment. BCR-ABL test is used to diagnose chronic myeloid leukemia (CML). Ph-positive test means Philadelphia chromosome (Ph) was found. If BCR-ABL is not detectable (negative), it means the BCR-ABL level is below the sensitivity level, which is minimum 0.01% on the international scale. [2] [7]

The leukocytes and thrombocytes levels have decreased too. Leukocytes decreased from extremely high levels to normal from 204.9 to 5.5x10³/ml. Thrombocytes decreased from 540 to 202x10³/ml.

Table 1 Blood test results before and after the treatment

	BCR-ABL	Hb	Le	Tr
Before treatment	0.33% (IS)	108	204.9	540
After treatment	0.077% (IS)	113	5.5	202
Reference values	<0.01%	110-180 g/l	4.5-11x10 ³ /ml	165-415 x10 ³ /ml

Imatinib is a standard therapy for CML patients and has changed a fatal disease with a survival of 6-7 years into a chronic condition. However, if a female patient wants to get pregnant, the therapy should be stopped 3 months before planning the pregnancy and during the pregnancy. If the patients takes Imatinib during pregnancy there are great risks of miscarriages or congenital abnormalities to the babies. On the other hand, if the therapy is stopped, the blood count may deteriorate and the immune system may collapse [8] [9]

According to the TCM theories, any type of cancer is a result of an imbalance of mind, body and spirit; and therefore it is required a holistic treatment approach involving lifestyle changes, acupuncture, herbal prescription, traditional exercise, moxibustion and meditation to restore the balance in the body. The origin is considered to be due to pathogenic factors, immune system deficiency, lack of “Zheng Qi,” and accumulation of “Xie Qi”. TCM treatment methods help in inhibiting the cell proliferation and subsequently inducing the production of hemoglobin, increasing the count of immune cells and relieving fatigue. [10]

By choosing specific acupuncture points, the immune function can be regulated, the healing can be speeded up, by reducing the symptoms can be treated the underlying cause of the disease and the body’s immune response can be normalized. [11]

Acupuncture can treat many disorders of the immune system like allergies, infections, viruses, hepatitis, psoriasis, but also some very serious like leukemia. In leukemia patients, the treatment helps by balancing, strengthening and stimulating the weakened immune system, by enhancing the cellular and humoral immunity in the patients, stimulating the production of T cells and promoting cytokines. [11] [12]

CONCLUSION

Acupuncture as part of the Traditional Chinese Medicine is a very helpful and effective treatment in chronic and long-lasting conditions. Tre treatment enhances the immunity in immune-related conditions and boosts the body’s defenses and encourages the cells to reproduce.

References

1. Besa CE; Chronic Myelogenous Leukemia (CML); 2020 [www.emedicine.medscape.com]
2. Machado PM *et al*; Monitoring of BCR-ABL levels in chronic myeloid leukemia patients treated with imatinib in the chronic phase - the importance of a major molecular response; Rev Bras Hematol Hemoter. 2011; 33(3): 211–215
3. Fleischer T, Chang TT, Chiang JH *et al.*, Adjunctive Chinese Herbal Medicine therapy improves survival of patients with chronic myeloid leukemia: a nationwide population-based cohort study, Cancer medicine, 15 January 2016, DOI: 10.1002/cam4.627
4. Chai B *et al*; System Prediction and Validation of TCM for Chronic Myeloid Leukemia Treatment from the Perspective of Low-Toxicity Chemotherapy: A Stilbene α -Viniferin Has a Proapoptotic Effect on K562 Cells via the Mitochondrial Pathway; Evid Based Complement Alternat Med. 2020; 2020: 1986962.
5. Liang F *et al*; Acupuncture and Immunity; Evid Based Complement Alternat Med. 2015; 2015: 260620.
6. Arranz L *et al*; Effect of acupuncture treatment on the immune function impairment found in anxious women; Am J Chin Med. 2007;35(1):35-51.
7. Hughes T *et al*; Monitoring CML patients responding to treatment with tyrosine kinase inhibitors: review and recommendations for harmonizing current methodology for detecting BCR-ABL transcripts and kinase domain mutations and for expressing results; Blood. 2006 Jul 1; 108(1): 28–37.
8. Bhandari A, Rolen Km, Shah KB; Management of Chronic Myelogenous Leukemia in Pregnancy; Anticancer Research January 2015, 35 (1) 1-11
9. Madabhavi I *et al*; Pregnancy Outcomes in Chronic Myeloid Leukemia: A Single Center Experience; Journal of Global Oncology, no. 5 (December 01, 2019) 1-11.
10. Ding X; Could Traditional Chinese Medicines speed up the blood cancer patient recovery after chemo-radio-therapy?; Szent-Györgyi Prize for Progress in Cancer Research BETHESDA, Maryland, January 24, 2012
11. Chen L *et al*; Enhancement of immune cytokines and splenic CD4+ T cells by electroacupuncture at ST36 acupoint of SD rats.; PloS one 12, no. 4 (2017):e0175568
12. Wu H; Acupuncture for Immune System Treatment; 2016 [www.amcollege.edu]