

# Study on the Clinical Efficacy of Megestrol Acetate Dispersible Tablets in Adjuvant Treatment of Acute Leukemia

Ben Niu, Lan Li\*

Department of Hematology, Shaanxi Provincial People's Hospital, Xi'an 710068, Shaanxi Province, China

\*Corresponding author: Lan Li, lilanlanxin@163.com

**Copyright:** © 2023 Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), permitting distribution and reproduction in any medium, provided the original work is cited.

**Abstract:** *Objective:* To analyze the clinical efficacy of megestrol acetate dispersible tablets in the adjuvant treatment of acute leukemia. *Methods:* 80 patients with acute leukemia admitted from December 2021 to December 2022 were randomly divided into two groups. The control group underwent chemotherapy, and the observation group took megestrol acetate dispersible tablets and underwent chemotherapy. The effect of the treatments were evaluated by analyzing the albumin (Alb) and prealbumin (Palb) indicators, and the adverse reactions were observed. *Results:* There was no significant difference in Alb and Palb indexes between the two groups before treatment ( $P > 0.05$ ). After treatment, Alb and Palb indexes in the observation group were greater than those in the control group ( $P < 0.05$ ). The incidence of adverse reactions in the control group was 20.00%, which was significantly higher than the observation group (5.00%), with  $P < 0.05$ . *Conclusion:* The combination of megestrol acetate dispersible tablets and chemotherapy is more effective in treating patients with acute leukemia, and the Alb and Palb indexes can be optimized. Besides, there are fewer adverse reactions, which means that the treatment is relatively safe.

**Keywords:** Acute leukemia; Megestrol acetate dispersible tablets; Adjuvant therapy

**Online publication:** July 28, 2023

## 1. Introduction

Acute leukemia is a hematological malignancy with a high morbidity and fatality among malignant tumors. Acute leukemia is life-threatening and requires timely treatment. Different from other tumors, there is no effective surgical treatment for acute leukemia, and it is usually treated with chemotherapy. However, chemotherapy can cause gastrointestinal reactions, resulting in loss of appetite, physical weakness, and fatigue. Rapid weight loss, bone marrow suppression, and other symptoms will affect the daily life of the patient, and in severe cases, the patient's treatment will be terminated<sup>[1]</sup>. Therefore, in order to prolong the survival of patients, corresponding adjuvant therapy should be applied during the treatment. Treatment with adjuvant drugs can improve the adverse reactions caused by chemotherapy and reduce the suffering of patients. Megestrol is very similar to steroids. It is generally used to treat advanced tumors. It can improve digestive tract diseases caused by chemotherapy, increase appetite, reduce bone marrow damage, reduce pain, and increase the effectiveness of the treatment<sup>[2]</sup>. In order to explore the effect of adjuvant therapy of megestrol acetate dispersible tablets, 80 cases of acute leukemia patients were selected in this study and treated in groups.

## 2. Materials and methods

### 2.1. General information

Eighty patients with acute leukemia admitted between December 2021 and December 2022 were randomly divided into two groups. The observation group consisted of 18 males and 22 females, aged 20–78 years old ( $50.2 \pm 4.5$  years old on average). The control group consisted of 20 males and 20 females, aged 20–78 years old ( $50.6 \pm 4.4$  years old on average). All patients or family members of this study signed an informed consent. The general information of the two groups of patients was relatively similar ( $P > 0.05$ ).

### 2.2. Methods

Patients with acute myeloid leukemia in the control group underwent daunorubicin and ara-C (cytarabine) chemotherapy. The vincristine, daunorubicin, cyclophosphamide, prednisone (VDCP) program was implemented for patients with acute lymphoblastic leukemia. The main drugs used were vindesine, anthracycline antibiotics, cyclophosphamide, and dexamethasone.

The patients in the observation group were given megestrol dispersible acetate tablets (Yilizhi) that are approved by the Chinese National Drug Administration H20010074, manufactured by Qingdao Guohai Biopharmaceutical Co., Ltd., every 3 to 4 days along with chemotherapy. Routine blood tests were performed, and if the white blood cell count was found to be below grade III, 200 ug of granulocyte colony-stimulating factor was injected subcutaneously, once a day. If the platelets decreased to degree IV, platelet transfusion was given. If the patient experienced gastrointestinal reactions, stomach-protecting and antiemetic treatment was performed according to the patient's condition, and treatment lasted for 28 days.

### 2.3. Observation indicators

- (i) Serum albumin (Alb) and prealbumin (Palb) were measured of the patients of both groups were measured, and the nutritional indicators before and after treatment were compared.
- (ii) The incidence of adverse reactions in the two groups of patients was observed, and incidences of constipation, elevated transaminases, elevated blood sugar, and lower extremity edema were recorded.

### 2.4. Statistical methods

In this study, SPSS 20.0 was used for data analysis, and a  $\chi^2$  test was performed on the count data ( $n$  [%]). The measurement data was expressed as mean  $\pm$  standard deviation (SD). A  $t$ -test was also performed, and  $P < 0.05$  indicates statistical significance.

## 3. Results

### 3.1. Alb and Palb indexes

Before treatment, there was no significant difference in Alb and Palb indexes between the two groups ( $P > 0.05$ ). After treatment, the Alb and Palb indexes of the observation group were greater than those of the control group ( $P < 0.05$ ), as shown in **Table 1**.

**Table 1.** Comparison of ALB and PALB levels in two groups of patients

Group	Number of cases	ALB (g/L)		PALB (mg/L)	
		Before treatment	After treatment	Before treatment	After treatment
Observation group	40	$45.26 \pm 6.06$	$44.05 \pm 8.14$	$265.62 \pm 3.25$	$269.64 \pm 5.83$
Control group	40	$45.27 \pm 6.36$	$32.07 \pm 7.26$	$265.37 \pm 3.14$	$259.35 \pm 4.77$
$t$		0.007	6.947	0.350	8.640
$P$		0.994	0.000	0.727	0.000

### 3.2. Incidence of adverse reactions

The incidence of adverse reactions in the control group was 20.00%, which was significantly higher than that in the observation group (5.00%), with  $P < 0.05$ , as shown in **Table 2**.

**Table 2.** Comparison of the incidence of adverse reactions between the two groups (n [%])

Group	Number of cases	Constipation	Elevated transaminases	Elevated blood sugar	Lower extremity edema	Rate of Incidence
Observation group	40	1	0	0	1	2 (5.00)
Control group	40	4	2	3	1	8 (20.00)
$\chi^2$						4.1143
$P$						0.043

### 4. Discussion

Acute leukemia is a very common malignant tumor with a high mortality rate. Therefore, the treatment of acute leukemia, prolonging the life and relieving the pain of the patient, have been highlighted in the medical field. Megestrol acetate is a synthetic progestin that has a good therapeutic effect in the treatment of hormone-sensitive tumors, and it has also been proven to be effective in treating of non-hormone-sensitive tumors. Besides, it can increase the appetite of patients and reduce the degree of malignant diseases [3-5]. Megestrol acetate can promote the production of neuropeptides in the hypothalamus, thereby stimulating appetite. It also regulates the satiety center and increase the absorption of food, thus increasing the production of lipase and fat. Besides, it also improves protein assimilation, regulates negative nitrogen balance, strengthen physical fitness, and prevents malnutrition. Moreover, it can also reduce the degree of blood toxicity and gastrointestinal reactions caused by chemotherapy, protect the bone marrow to a certain extent, and make patients more resistant to chemotherapy and improve their quality of life [6-9]. The mechanism of action of megestrol is closely related to the down-regulation of serum cachexia-related cytokine IL-6, and megestrol acetate dispersible tablets can control the degree of adverse reactions in the body, and can be taken for a long time to reduce the impact of chemotherapy [10-11].

In this study, there was no significant difference in Alb and Palb indexes between the two groups before treatment ( $P > 0.05$ ). After treatment, the Alb and Palb indexes of the observation group were greater than those of the control group ( $P < 0.05$ ). The rate was 20.00%, which were significantly higher than that of the observation group (5.00%), with  $P < 0.05$ .

### 5. Conclusion

In conclusion, the use of megestrol acetate dispersible tablets can improve the therapeutic effect when treating patients with acute leukemia, optimize Alb and Palb indicators, and it has fewer adverse reactions. Therefore, it should be popularized in clinical practice.

### Disclosure statement

The authors declare no conflict of interest.

### References

- [1] Hu J, Liu Q, 2021, Observation on the Effect of Hysteroscopy Combined with Megestrol Acetate Dispersible Tablets in the Treatment of Endometrial Polyps. Chinese Rural Medicine, 28(10): 15–16.

- [2] You Y, 2021, Discussion on the Role of Megestrol Acetate Dispersible Tablets in the Adjuvant Treatment of acute Leukemia. *Marriage and Health*, 2021(6): 152.
- [3] Ren L, Li X, Pang M, 2021, Effect of Megestrol Dispersible Tablets on the Nutritional Status of Postoperative Gastric Cancer Patients. *Armed Police Medicine*, 32(12): 1081–1082.
- [4] Liao B, Tang L, 2022, Effect of Megestrol Acetate Combined with Ramosetron in Improving Anorexia Symptoms in Patients with Malignant Tumor Chemotherapy. *World Compound Medicine*, 8(2): 166–169.
- [5] He Q, Bai J, Nan Y, et al., 2021, Analysis of the Effect of Megestrol Acetate in Adjuvant Treatment of Endometrial Cancer. *Shenzhen Journal of Integrated Traditional Chinese and Western Medicine*, 31(3): 124-125.
- [6] Shen M, Guo X, Li Y, et al., 2019, Application of Megestrol Acetate Dispersible Tablets in Adjuvant Treatment of Patients with Acute Leukemia. *Chinese Modern Doctor*, 57(26): 5–8.
- [7] Hu J, 2021, Clinical Efficacy and Safety of Aidi Injection Combined with Megestrol in the Treatment of Endometrial Cancer. *Journal of Clinical Rational Drug Use*, 14(15): 65–67.
- [8] Wu Z, Wei X, 2022, Clinical Efficacy of Thalidomide Combined with Conventional Chemotherapy in the Treatment of Acute Leukemia and its Impact on the Immune Level of Patients. *Clinical Medicine Engineering*, 29(5): 623–624.
- [9] Su T, Ren R, Wang C, et al., 2022, Influencing Factors of Platelet Transfusion Efficacy in Acute Leukemia and its Impact on Clinical Prognosis. *Journal of Qiqihar Medical College*, 43(2): 116–120.
- [10] Zhou C, 2022, Efficacy of Recombinant Human Thrombopoietin in the Treatment of Acute Leukemia Thrombocytopenia After Chemotherapy. *Medical Diet Therapy and Health*, 20(13): 39–42.
- [11] Liu T, Huang S, Li X, et al., 2022, Analysis of Immunophenotype and Clinical Prognosis in Patients with Mixed Phenotype Acute Leukemia. *Chinese Journal of Experimental Hematology*, 30(5): 1305–1310.

**Publisher's note**

Bio-Byword Scientific Publishing remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.