
A Noval Herbal Formulation For Thombrocytosis

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ABSTRACT

Thrombocytosis is described as the existence of too much platelet in the blood. The condition is commonly grouped into two categories which, Secondary and Primary/ essential thrombocytosis. Primary or essential thrombocytosis results from abnormal cell production in the bone marrow, causing an increase in the number of platelets due to a reason that is purely unknown. Secondary thrombocytosis leads to increased platelet production in the bone marrow caused by a known ongoing medical condition, infection or disease such as inflammation, anaemia or cancer. Thrombocytosis symptoms include spontaneous clotting of blood in the arms and legs, which could lead to heart attack as well as stroke if untreated.

In the present experiment an attempt is made to study the effect of a novel herbal formulation made up of Cinnamon, Andrographis paniculata and Zingiber officinale experimental results on albino rats shows that there is a significant decrease in the platelet count when compared to control group. By using this formulation possibility of reducing the risk of stroke and heart attack can be minimized. This also decreases the formation of blood clots in arteries and veins of the body.

KEY WORDS: *Thrombocytosis treatment; herbal formulation; cinnamomum zeylanicum; Andrographis paniculata*

INTRODUCTION:

Thrombocytosis (or thrombocythemia) is the presence of high platelet counts in the blood. In a healthy individual, a normal platelet count ranges from 150,000 and 450,000 per mm³ (or micro litre) (150–450 x 10⁹/L). If platelet counts are over 750,000 or 1,000,000, and especially if there are other risk factors for thrombosis, treatment may be needed. Selective use of aspirin at low doses is thought to be protective. Extremely high platelet counts in primary thrombocytosis can be treated with hydroxyurea (a cytoreducing agent) or anagrelide (Agrylin) (Harrison et al 2005. These drugs are found have severe side effects (Halls et al 2006, Cryer and Freidman 1999, Campbell et al 1999). In ayurvedic scriptures it is considered as Raktha Pitta (Nishath 1998, Chakrapani 1941), Achrya charaka (1941) suggested certain herbs for platelet aggregation and increased platelet problems. How far they will give relief is not known. Hence in the present study an attempt is made to experimentally verify the efficacy of certain herbs that are used in thrombocytopenia.

MATERIALS

Herbs of Glycyrrhiza glabra (stem), Andrographis paniculata (dried leaf), Zingiber officinale (Rhizome) and Cinnamomum zylanicum (bark) 75 mg each, powdered and filled into a capsule.

RATS

Male Wistar strain rats weighing 100± 10 grams were taken for this study. They were kept in cages and standard rat feed was given to them ad libitum.

EXPERIMENTAL DESIGN

Sixty albino rats were taken for the study. They were divided into six groups. Herbal treatment was given for 3 days to the each group as detailed below. On the fourth day blood was collected from the tail region, blood smear was prepared and total platelets were counted on a haemocytometer.

S.No.	Name of the Group	Treatment details.	Dose
1	A	Control	No administration of herbs
2	B	Glychrizia glabra	75 mg twice a day/animal
3	C	Andrographics paniculata	75 mg twice a day/animal
4	D	Zingiber officinale	75 mg twice a day/animal
5	E	Cinnamomum zylanicum	75 mg twice a day/animal
6	F	Mixture of All above four herbs	75 mg twice a day/animal

RESULTS:

The data regarding the effect of herbs on platelet count of rats was presented in Table 2.

TABLE: 2

EFFECT OF DIFFERENT HERBS ON THE PLATELET COUNT IN RATS.

(Values are mean of 10 observations. \pm Indicate standard deviation. 'P' denotes the level of significance and NS non significance. + or - indicate the increase or decrease over control)

S.No.	Name of the Group	Treatment details.	Platelet count ($\times 10^3/\mu\text{l}$)		Percent change Over control
			1 st day	4 th day	
1	A	Control	1037 \pm 28	1040 \pm 46	-
2	B	Glychrizia glabra	1040 \pm 41	857 \pm 32	-17.36 P<0.001
3	C	Andrographics paniculata	1029 \pm 35	873 \pm 44	-15.81 P<0.001
4	D	Zingiber officinale	1027 \pm 47	899 \pm 38	-13.31 P<0.001
5	E	Cinnamomum zylanicum	1034 \pm 39	867 \pm 33	-16.39 P<0.001
6	F	Mixture of All above four herbs	1027 \pm 44	840 \pm 27	-19.0 P<0.001

The above results show that here is a significant reduction in the platelet count in rats after four days treatment for all above five types of treatments. But the efficacy of treatment is as follows. F<B<E<C<D. Mixture of all four herbs gave better results followed by Glycyrrhiza glabra.

DISCUSSION

The most popular drugs for treatment of thrombocytosis are aspirin, anagrelide and hydroxyurea. All these drugs are having side effects. Aspirin is well known for its intestinal bleeding. Anagrelide causes dark sin, headache, *dizziness*, *vomiting*, and loss of appetite; *diarrhoea*, *constipation*, stomach pain, gas, upset

stomach; mild rash or itching; runny or stuffy nose, sore throat; *numbness* or tingly feeling. Back pain; or. Vision problems, ringing in ears (Ayhan 2005). To circumvent these problems an alternate method of treatment is tried by using herbs. Variety of herbs and formulations are used in Ayurveda for platelet aggregation and thrombocytosis. There is no technical information on the efficacy of these drugs. In the present study the effect of four deferent herbs was studied on the rat platelet count. The results show that there is a significant reduction in the platelet count. When these herbs are used synergistically the efficacy is more. However each individual herb also decreases the platelet count.

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