

A case study on Ayurvedic management of Immune Thrombocytopenic Purpura w.s.r to *Tiryaka Raktapitta*

Case Report

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Abstract

Immune Thrombocytopenic Purpura is an autoimmune disorder which is characterized by destruction and decrease in the number of platelets count due to the presence of autoantibodies directed against platelet. There are two types of Idiopathic thrombocytopenic purpura i.e. acute and chronic forms which are characterized by mucocutaneous bleeding such as oral mucosa, heavy menstrual bleeding or gastrointestinal bleeding and low platelet count with normal peripheral blood cells and smear. Clinical features of ITP are ecchymosis and petechiae or thrombocytopenia incidentally found on a routine CBC. Bleeding disorders are explained in classics under the heading of *Raktapitta*. ITP can be correlated with *Tiryaka Raktapitta* as in this disorder. It is *tridoshaja vayadhi* and its manifestation will be subcutaneous bleeding. In this study, a 45 years old female patient had complaints of bleeding from gums and heavy menstrual bleeding for 4 years was treated with *Guduchi Kwatha* and *Aamlaki churna*, *Shatavari churna*, *Vata churna*, *Nimba Arka*, fresh *Papaya patra swarasa* for 6 months. Significant improvement was observed in patient condition and blood reports and platelet count is stable without any allopathic medications.

Key Words: *Tiryaka Raktapitta*, Immune Thrombocytopenic Purpura, *Papaya patra swarasa*.

Introduction

Immune Thrombocytopenic Purpura is an autoimmune disorder in which autoantibodies will be generated in the body and do destruction of platelet membrane glycoprotein IIb and IIIa resulting in premature removal of platelets by the macrophage monocyte system. ITP can be either primary or secondary. ITP definitions vary depending on the duration of illness -Newly diagnosed less than 3 months, Persistent ITP -3 to 12 months and Chronic ITP more than 12 months (1). Immune Thrombocytopenic Purpura is a form of thrombocytopenia due to increased destruction of platelets by autoimmune mechanism. Acute ITP is a self-limiting disease mainly seen in children age between 2-4 years, which is sudden onset, shorter duration, presents 1-3 weeks after viral infections and usually resolves within 6 months. Chronic ITP is persistent thrombocytopenia for more than 6-12 months. More common and usually seen in adults age between 20-40 years. Prevalence of a disease is more in female than male. Antiplatelet antibodies act as opsonins (an antibody or other substance which binds

to foreign microorganisms or cells making them more susceptible to phagocytosis) and are recognized by IgG Fc receptors present on mononuclear phagocytes of RE system and are destroyed there resulting in thrombocytopenia. In ITP clinical features are due to thrombocytopenia: Skin bleeding, Mucosal bleeding, Menorrhagia in females etc (2).

ITP managed in modern science by corticosteroid, intravenous immunoglobulin or intravenous anti-D can be initial treatment with or without steroids. Most adult patients will relapse after initial treatment and hence require second-line therapy. Splenectomy is considered second-line effective treatment. Additional second-line treatment options (allowing postponement of splenectomy) include many agents: azathioprine, danazol, cyclosporine, cyclophosphamide, dexamethasone, vinca alkaloids, mycophenolate mofetil, rituximab, and thrombopoietin-receptor agonists (3).

According to Ayurvedic classics in *Raktapitta*, when *pitta* vitiated *rakta* increases in the amount due to *ushna guna* of *pitta*, it begins flowing out of the body through different paths upward, downward or both, or through skin pores (4). According to the based-on direction of blood flowing *Raktapitta* is classified into three types which are as follows (5)-

A) *Urdhwaga*- the causative attributes are *snigdha* and *ushna guna* which vitiate the mixture of *kapha* and *pitta* and oozing of contaminated blood takes place from upward passages or orifices i.e., from oral cavity, ears, eyes and nose.

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- B) *Adhoga*- For *adhoga raktapitta ushna* and *ruksha guna ahara- vihara sevana* is the main cause, which vitiates the *vata* and *pitta dosha*. the vitiated *rakta dhatu* oozes out from the downward orifices as vaginal bleeding, rectal bleeding and hematuria.
- C) *Tiryaka*- When all the *doshas* are vitiated and are circulating in the bloodstream, the manifestation will be subcutaneous petechial hemorrhage. Considering the signs and symptoms of ITP and the clinical features of a patient in this study, it can be diagnosed as *tiryaka raktapitta*.

In this case study, the patient is a known case of ITP with complaints of Black spots on both legs, bleeding from gums, heavy menstrual bleeding, etc. she has been suggested for splenectomy but the patient is not willing to undergo surgery. So, she visited Parul Ayurveda Hospital for ayurvedic treatment.

Case Report

Chief complaint

Patient complaints of black spots on both legs, Bleeding from gums with Heavy menstrual bleeding first 3 days then scanty bleeding on 4th and 5th day during menstrual cycle for 4 years. She also complained of weakness, generalized bodyache, tastelessness in the past 2 years.

History of present illness

A 45 years old female patient came to the OPD of Parul Ayurved Hospital, Vadodra. who was apparently normal before 4 years. Since then, she has been suffering from multiple red spots over legs and arms which turn in black color, bleeding from gums and menorrhagia. She was hospitalized and diagnosed as ITP and put on Danazol therapy for 3 years. Patient underwent treatment and was feeling better but she was advised to undergo splenectomy or continue the same treatment lifelong. She also complained of weakness, generalized bodyache, tastelessness in the past 2 years. Hence, she came to our hospital to try ayurvedic treatment anticipating that she may not have to splenectomy or continue lifelong treatment.

Past medical history

Patient was hospitalized in ICU for heavy bleeding per vagina followed by unconsciousness on 01/12/2015 and was treated for the same. During hospitalization routine blood investigation was done which suggested thrombocytopenia and hence 1-unit single donor platelets [SDP] transfusion was done. After 3 days of the treatment course, consultant doctor advised some investigations to recheck blood

parameters and reports were suggestive of thrombocytopenia. Hence patient was referred to a hematologist and diagnosed as a case of ITP. Initially patient was treated with Prednisolone with Vitamin supplementation for 1 month. Then patient was put on Tab Danazol 100mg in morning and Tab Danazol 50mg in night, Tab Ultracet on/off along with Vitamin supplementary on/off for 2 year. Once again patient was admitted in hospital for severe thrombocytopenia (platelet count-16000/cu.mm) on 14/07/2017 which was managed by platelets transfusion. Then hematologist had prescribed Tab Danazol 100mg BD which was continued for 1 year and was advised to undergo splenectomy or continue the same treatment lifelong.

Personal history

- Diet –vegetarian diet
- Sleep – Disturbed
- Appetite – Poor
- Micturition – 4-5 times/ day, 2-3 times/ night
- Bowel – regular -once/ day/ clear
- Menstrual History- 5-7days -Flow/28-30 days -cycle / clotted with heavy bleeding, 10-12 pads/day
- Obstetric History: G₁P₁A₀L₁, FTND.

General examination

- BP – 110/70mmhg
- Pulse- 84/min
- RR –18/min
- Temp- 93.6/ F/ Afebrile
- Pallor - Present
- Edema – Absent
- Nails – Normal
- Clubbing, Icterus, Lymphadenopathy - Absent
- Tongue – Dry, Redness+
- Height- 163cm
- Weight- 65 kg
- BMI- 24.46 kg/m²

Systemic examination

- R/S- AEBE, clear
- CVS- S1, S2 normal
- CNS- Conscious, oriented
- P/A- Soft, nontender, no distention, liver, spleen not palpable.

Treatment protocol

Vasa is a drug explained in classics for the management of *Raktapitta*. Patient has been advised to take fresh *swarasa* 20 ml daily morning on empty stomach. But didn't take the *vasa swarasa* on regularly and discontinued after 4-5days. and following medications were continued throughout the treatment.

Table 1: Internal medications intervention.

Sr. no.	Medications/formulations	Dose	Anupana	Duration
1	I. <i>Guduchi Kwatha</i>	30 ml TDS	Lukewarm water Water	2 months
	II. <i>Amlaki churna + Shatavari churna + Vata churna</i>	1 TSP TDS		
	III. <i>Nimba Arka</i>	5 ml BD		
	IV. Fresh <i>papaya patra swarasa</i> [Juice]	15 ml OD		
2	I. <i>Guduchi Kwatha</i>	30 ml BD	Lukewarm water Water	2 months
	II. <i>Amlaki churna + Shatavari Churna</i>	1 TSP BD		
	III. <i>Nimba Arka</i>	5 ml OD		
3	I. <i>Guduchi Kwatha</i>	30 ml OD		2 months
	II. <i>Amlaki churna</i>	1 TSP OD		

Results

There was significant improvement found in all symptoms of the disease. After completion of treatment, there is platelet count are stable without danazol therapy. Patient was on Danazol therapy before treatment and Danazol therapy was stopped after receiving 2-month ayurvedic medications.

Table 2: Shows Improvement in Signs and Symptoms Of ITP

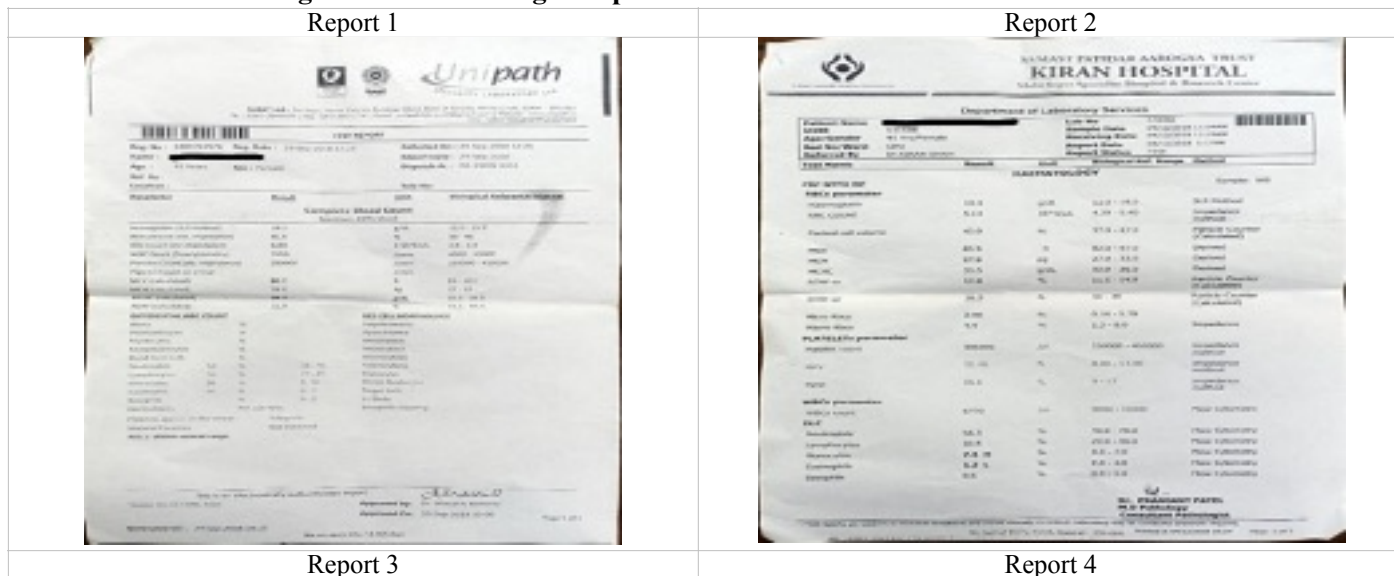
Sr. no.	Symptoms	Before treatment	After treatment		
			AT/1 st follow up	AT/2 nd follow up	AT/3 rd follow up
1	Heavy menstrual bleeding	[10-12 pads/day]	[7-8 pads/day]	[5-6 pads/day]	[5-6 pads/day]
2	Black spots on both legs (petechial hemorrhagic patches)	Moderate	Moderate	Mild	Absent
3	Bleeding gums	Mild	Mild	Mild intermittently	Absent
4	Weakness	Moderate	Mild	Absent	Absent
5	Body ache	Moderate	Moderate	Absent	Absent
6	Tastelessness	Mild	Mild	Normal taste	Normal taste

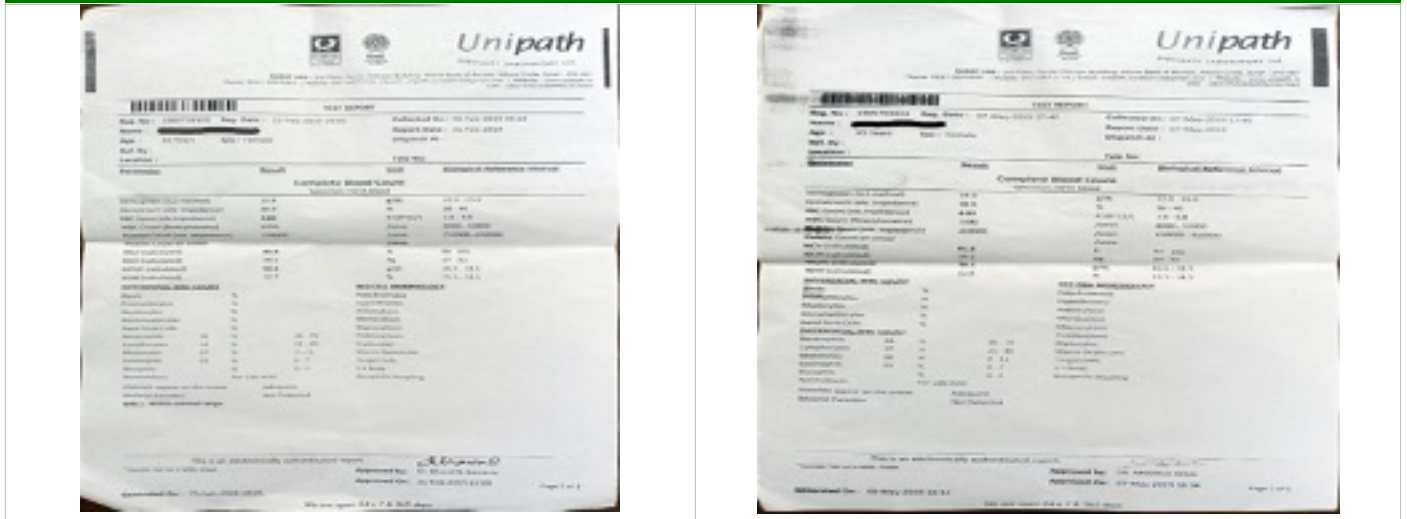
Table 3. Showing improvement in blood parameters

Sr no	Investigation	Before treatment	After treatment		
			1 st follow up	2 nd follow up	3 rd follow up
		[29/09/2018]	[04/12/18]	[21/02/19]	[07/05/19]
1	Hb [g/dl]	14.1	14.3	13.8	14.0
2	WBC [/cmm]	7650	6770	6250	7390
3	Neutrophils %	54	58.3	56	64
4	Lymphocytes %	36	32.5	34	27
5	Monocytes %	8	7.4	7	6
6	Eosinophils %	2	1.2	3	3
7	Basophils %		0.6		
8	Platelet [/cmm]	289000	306000	276000	269000

Reports show that there was a drop in platelet count during third and fourth follow-up, but the platelet count was within the normal range (150000 to 410000/cmm) and patient did not show any signs and symptoms of bleeding as explained in the chief complaints.

Figure no. 1: Showing that platelets count before and after treatment.





Discussion

Immune Thrombocytopenic Purpura is a form of thrombocytopenia due to increased destruction of platelets by autoimmune mechanism. Therefore, ITP can be treated with drugs having property of Antithrombocytopenic, Immunomodulatory, Anticoagulation and Antineoplastic activity, etc. In this study *Guduchi*, *Aamlaki*, *Shatavari*, *Vata*, *Nimba*, *Papaya patra* were used for the treatment of ITP.

- **Guduchi** (*Tinospora cordifolia* (Willd.) Miers): *Guduchi* is one of the important herbal medicine which is used in the management of *raktadusti vikaras*. The properties of the *guduchi* are *rasayan*, *sangrahi*, *balya*, *agnidipana* and *tridosha shamak* and *raktishodaka* (6). The drug has been proved for its immunomodulation, anticoagulant and antineoplastic activity. These properties of *guduchi* are important in the management of ITP. *Guduchi* reduces and prevents the destruction of platelets by immunologic process and increased megakaryocytes in the bone marrow (7).
- **Aamlaki** (*Embllica officinalis* Gaertn): the drug has the properties like *Lavana rahita pancha rasa*, *sheeta virya*, *madhura vipaka*, and *guru-ruksha-sheeta guna*. The pharmacological actions of drug as per ayurved are *pittashamaka* (8), *rasayana*, *raktapittahara*, *shonitsthapana*, *yonivyapadahara* and *pandughna* (9). the chemical composition of *Amalaki* is vitamin c, nicotinic acid, gallic acid, riboflavin, tannic acid carotene and glucose. Research study on *amalaki* shows that it possesses the action antioxidant, immunomodulatory, antimicrobial, hepatoprotective, anti-inflammatory, anticarcinogenic and gastroprotective (10).
- **Shatavari** (*Asparagus racemosus* Willd): the properties of the drug are *Madhura*, *Tikta Rasa*, *Guru-Snighdha Guna*. It acts as *Rasayana*, *balya* and *jeevaniya* which helps in improving the immune power of an individual, strength and production of new cells in the body. This drug is also used in heavy menstrual bleeding i.e., menorrhagia. Oligospirostanoside constituent of the drug has the action of antiinflammation (11). *Asparagus racemosus* is a strong immunomodulator and it

stimulates the macrophages and neutrophils it possesses an antioxidant property that prevents cellular damage (12).

- **Vata** (*Ficus benghalensis* Linn.) has actions like *Stambhana*, *Kaphapittajita*, *Yonidoshart* and it's indicated in *Raktapitta*, *yonidosha*. *Vata* contains Beta-Progesterone it is having property of antioxidant, anti-inflammatory action, etc. *Ficus benghalensis* significantly increased the phagocytic function of human neutrophils. Immunomodulatory activity of *F. benghalensis* as an enhancer of general immunity against various physical and mental disorders (13).
- **Nimba** (*Azadirachta indica* A. Juss): the properties of the drug as per ayurvedic literature are *Tikta-Kashaya rasa*, *Laghu-Ruksha guna*, *Sheeta-virya*, *Katu-vipaka* and it is used in *kapaha pitta vikaras* as it has *KaphaPittaghna* property (14). It has antioxidant, Blood purifier, antimicrobial activity and enhance the humoral antibody response to the antigen and hence boosts the immune system (15).
- **Papaya** (*Carica papaya* Linn.)- research study of Fresh *C. papaya* leaf extract helps in the increasing platelet and RBC counts & boost thrombopoiesis and erythropoiesis (16) and it has been for Anti-thrombocytopenic activity and immunomodulatory activity (17).

The drugs selected for the treatment were helpful in breaking the *samprapti* of the diseases and helps in the prevention of destruction of platelet cells by autoantibodies.

Conclusion

In this clinical case study, the patient has shown good improvement symptomatically during the management of the ITP. Chronic ITP needs lifelong medical management or splenectomy. With the help of Ayurvedic herbal medicine treatment protocol, the patient becomes free from the medicine Tab danazol and able to maintain the normal platelet count with 6 months of ayurvedic herbal medicines. The drug which is used in the management of ITP possesses the properties of antioxidant, immunomodulatory, antimicrobial, hepatoprotective, anti-inflammatory and

anti-carcinogenic. These properties of drugs prevent platelet destruction by the immunologic process. *thus*, Improvement was observed in the symptoms of petechial hemorrhage, menstrual bleeding, weakness, body ache and bleeding gums. So, this clinical study shows that chronic ITP cases can be managed with ayurvedic medicines effectively and help in preventing the complication of diseases and side effects of the long-term use of Tab danazol-like drugs.

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