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RESEARCH ARTICLE

TREATMENT OF IMMUNE THROMBOCYTOPENIC PURPURA (ITP) IN AYURVEDA - A CASE STUDY

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Abstract

ITP (Idiopathic Thrombocytopenic Purpura) is an autoimmune disorder caused by a decrease in the number of platelets in the blood. Platelets are cells present in the blood that help in coagulation (helps stop bleeding). Low platelets can lead to bleeding gums, easy bruising and internal bleeding. 'Idiopathic' means the cause is unknown. 'Thrombocytopenia' means a decrease in the number of platelets in the blood. 'Purpura' means a purple discoloration of the skin, as caused by bruising. A 6-year-old male patient complained of epistaxis, bruising, low platelet count, bleeding gums and occasional blood in stools. The clinical findings and symptoms of the patient are considered to be due to ITP. In Ayurvedic diagnosis, it is associated with TiryagataRaktapitta. Along with this, the patient was also given Platoplan Syrup, SwarnVasantMalti Rasa, Kumar KalyanRas, Cap Ashwagandha, Immune Booster etc. After 1 month of taking the medicine, the patients got some relief from the medicine. After completion of the medication, the patient gets relief from the symptoms and most commonly the platelet count decreases.

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Introduction:-

Immune thrombocytopenic purpura (ITP), also known as idiopathic thrombocytopenic purpura is an autoimmune disorder of bleeding from the vessels of blood marked by a decreased platelet count in the absence of other reasons.[1][2]It is an immune-mediated disease in adults and children characterised by a transient or persistent decrease in platelet count, with an increased risk of bleeding depending on the degree of thrombocytopenia.[3] ITP often increases the risk of bleeding from the nose, gums, skin (resulting in purpura and bruising)[1]. Incumbent on the age group affected, ITP causes two different clinical itp: the acute form in kids and the chronic form in adults. Acute ITP often follows an infection and usually resolves in 2 or 3 months, whereas the more chronic form lasts more than 6 months and has no specific cause yet known. However, the pathogenesis of ITP is similar in both conditions, this includes antibodies against various platelet surface antigens, such as glycoproteins.

Symptoms of ITP include continuous formation of scratches and small wounds (petechiae), especially on the arms and legs (Upper and lower extremities).And, if the platelet count falls below 20,000 per μL , then bleeding starts from the nose (Epistaxis)or gums, as well as menorrhagia (excessive menstrual bleeding), may occur.[4] A platelet count of less than 10,000 can cause the spontaneous formation of blood masses in the mouth. In addition, bleeding

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time from minor cuts or abrasions is usually prolonged. In the cases in which the platelet count is extremely low (below 5,000), there will be fatal and serious complications.

The fatal complications include intracerebral or subarachnoid haemorrhage, bleeding from the intestines or gastrointestinal bleeding, or internal bleeding. A patient with ITP who has a very low platelet count is at risk for internal bleeding following a severe abdominal trauma, such as a vehicle accident. These complications are mostly occur when the platelet count is below 20,000 per μL . [5]

In cases of very low platelet counts or significant bleeding, treatment options may include corticosteroids, intravenous immunoglobulin, anti-D immunoglobulin, or immunosuppressant drugs. Refractory ITP, which does not respond to conventional treatment or recurs after splenectomy, requires treatment to reduce the risk of significant bleeding. [4]

According to the Ayurvedic classics on Raktapitta, when the quantity of pitta contaminated Rakta increases due to the hot quality of pitta, it starts flowing out of the body through various routes like upward, downward or on both sides, or through the pores of the skin. [6]

Based on the direction of blood flow, Raktapittais classified into three types which are as follows [7]

1. UrdhvagataRaktapitta - Its causative qualities are snigdha and ushna which vitiate the mixture of kapha and pitta and the leakage of contaminated blood through the upward passages or orifices, i.e., the oral cavity, nose ears, and eyes.
2. AdhogataRaktapitta - In AdhogaRaktapitta, hot and dry quality food intake is the main reason, which vitiates the Vata and Pitta doshas. The contaminated RaktaDhatu comes out from the lower orifices in the form of rectal bleeding, vaginal bleeding and hematuria.
3. TirayakGataRaktapitta- When all the doshas get aggravated and flow into the bloodstream, its symptom will be bleeding into the subcutaneous skin. Considering the symptoms of ITP and the clinical features of the patient in this study, it can be diagnosed as obliterating hemoptysis.

ITP may be associated with TiriyagataRaktapitta, in both cases there is blood pathology and the manifestation is subcutaneous. In the present case, the male patient had the following clinical symptoms: bruises, bleeding from gums and nose, sometimes blood in stools. Hence the patient was given syrup Platoplan, syrup Hemoplan, Cap. Ashwagandha etc.

Pathophysiology-

In about 60% of cases, Antibodies against platelets can be detected. [8] Mostly, these antibodies are against platelet membrane glycoproteins IIb-IIIa or Ib-IX, and are of the immunoglobulin G (IgG) type. The Harington-Hollingsworth experiment established the pathogenesis of Immune thrombocytopenic purpura. [9]

IgG platelet coating makes them vulnerable to liver cells i.e. Kupffer cells as well as splenic macrophages through phagocytosis. IgG autoantibodies can also damage the platelet precursor cells, the megakaryocytes, even though this is thought to contribute little to the decrease in platelet count. Recent research has shown that depraved production of glycoprotein hormone, thrombopoietin, that is a stimulant of production of platelets, is probably a contributing factor to the decrease in platelets. This association has led to the development of a class of TP-targeting drugs called thrombopoietin inducer agonists. [5]

Auto-Antibody production stimulus in ITP may be an abnormal activity of T-Cells. [10][11][12] Initial findings suggest that the drugs which target B cells like rituximab affect T cells. [13]

Ayurveda Aspect -

According to the vitiation of Raktapitta, initially the Pitta disturbance is caused due to the diet having hot, sour, sharp, pungent and salty nature and activities like living in an extremely hot environment. Gradually, the contaminated Pitta further contaminates the RaktaDhatu due to its similar properties. Both of these increase further and the fluid of other Dhatus starts flowing out. As a result, this fluid increases in blood volume and flows out of the upper and lower parts of the body. [14] Raktapitta primarily affects the blood vessel sources and its roots, i.e., the Yakrit (Liver) and Pliha (spleen). [15] In this condition, the contaminated blood crosses the tissue barrier boundary and travels through the blood vessels in the body. And eventually bleeding starts from various orifices.

Due to Nidan consumption

↓

Pitta gets contaminated, then mixes with blood and contaminates the blood

↓

Due to the hot nature of Pitta dosha, the liquid elements of other Dhatus like Maans (flesh), Meda (fat) etc. come out of their respective tissues and mix with the blood.

↓

This increases the amount of RaktaDhatu beyond the normal limit

↓

This also increases the amount of blood flowing in the blood vessels, which creates excessive pressure in the blood vessels

↓

Due to the pressure of blood and heat of Pitta, the walls of the blood vessels get damaged and blood starts flowing from various orifices of the body.

↓

Bleeding occurs from mouth, nose, ears, eyes, skin, anus, penis and vagina (NavDwar)

↓

The leakage of blood contaminated by Pitta from various orifices of the body (NavDwar) is called Raktapitta.

Methods:-

Case study -

Babu Ram, a 6-year-old boy, from Hisar, Haryana. One day he had an episode of continuous nasal bleeding for 1 hour and also had some bruises on his body. Then his parents took him to the hospital and doctors advised them to do some blood tests along with a bone marrow aspiration biopsy and diagnosed it as ITP (Immune thrombocytopenic purpura). He was admitted to the hospital. They gave him steroids, injections and along with platelets transfusion was done. Then his platelet count reached 50,000 and then they put him on steroids. They continued the treatment for at least one year but after stopping the steroids his platelet levels decreased again. In December 2019, he had an episode of blood vomiting and continuous nasal bleeding, bruises, and occasionally blood in stool. After seeing his condition, his parents got scared and visited PGI, Chandigarh and got admitted there. At that time his platelet count was only 5000. The doctors gave him steroids along with that platelet transfusion was done. During hospitalisation, after searching a lot on the internet for best treatment of Itp, his parents came to know about Planet Ayurveda. They arrived at Planet Ayurveda, Mohali in December, 2019. At that time his platelet count was 8000. Within one month of treatment from Planet Ayurveda, his platelet count started increasing and gradually his steroids were also stopped. They continued his treatment and followed the dietary instructions given by Dr. Vikram Chauhan, within three months of the treatment his platelet count reached 1,62,000. After that, his medications gradually stopped and now he is fine.

Patient Case Sheet -

Known Case of (K/C/O) - ITP (Immune Thrombocytopenic purpura)

No History of (N/H/O) - Hypertension / Thyroid / Type II Diabetes Mellitus

History of Present Illness - The patient's parents said that he was completely fine 3.5 years ago. Since then he has been suffering from problems like blue and purple spots (bruises) on the body, bleeding from gums and nose, blood in stool, but this keeps happening occasionally for 3.5 years. The doctor told him it was ITP and started treatment. The patient underwent treatment, but he could not get complete relief.

P/H (Personal History)-

- **Appetite** - Normal
- **Micturition** - 3-4 times/ Day
- **Bowel** - Regular
- **Sleep** - Sound
- **Diet** - Vegetarian

General Assessment -

- **Pulse** - 78/min
- **Respiratory Rate** - 18/min
- **Temperature** - 98.6/F

- Tongue - Coated

Systemic Assessment-

- Respiratory System (R/S) - AEBE (Air entry bilaterally equal) clear
- Cardiovascular system (CVS) - S1 S2 Heard
- Central Nervous System (CNS) - Conscious and oriented
- Per Abdomen (P/A) - Soft and Nontender

Eight- Fold Examination -

- Nadi (Pulse) - PittaprabhanVatajanubandhi
- Mal (Bowel) - Normal
- Mutra (Urine) - Normal
- Jihva (Tongue) - Coated
- Shabad(Speech) - Normal
- Sparsha (Touch) - Warm
- Drik (Eyes/ Vision) - Normal
- Aakriti (Shape) - Normal

Ten-Fold Examination -

- Dooshya (Any tissue of the body that becomes Vitiated) - RaktaDhatu
- Desha (Habitat) - Sadharan
- Bala (strength) - Heena
- Kaala (Time) -SheetaRitu (Winter season)
- Prakriti (Constitution of Body) - Pitta and Vata
- Agni (Digestive fire) - Mandagni (Low digestive fire)
- Vaya (Age) -Bala (Early Age)
- Satva (Psychological Strength) - Madhyam
- Satmya (Adaptability) - Dadhi (Curd)
- Ahara (Diet) - Vegetarian

Family History –

There is no family history of ITP

Investigations -

CBC along with Bone marrow Aspiration Biopsy to diagnose ITP

Diet Chart -

The patient was advised to avoid all citrus fruits, dairy products, non-vegetarian food, packaged food, processed food, bakery food, junk food, refined flour and sugar based items. The patient was also advised to drink two juices- green juice and red juice.

Green juice- Papaya leaves, mint leaves, wheat grass, durva (Cynodondactylon) grass, coriander leaves, spinach leaves, green grapes and 1 amla.

Red juice- Pomegranate, beetroot, ashwagandha leaves, carrot, apple, marigold and rose petals.

Management -

Table 1:- Medications for 1st month.

Sr. No.	Name of Medicine	Dosage	Frequency	Vehicle
1.	Syrup Plato Plan	2 teaspoons	BD	Plain Water
2.	Syrup Hemoplan	2 teaspoons	BD	Plain Water
3.	Tab. PravalPanchamritRas	1 tablet	BD	Plain Water
4.	Cap. Immune booster	1 capsule	BD	Plain Water
5.	Tab. BalarkRas	1 tablet	BD	Plain Water
6.	Cap. Ashwagandha	1 capsule	BD	Plain Water

7.	Kumar KalyanRas	1 tablet	BD	Plain Water
8.	Tab. GandhakRasayan	1 tablet	BD	Plain Water
9.	Tab. SwaranVasantMaltiRas	1 tablet	BD	Plain Water

Table 2:- Medications for 2nd and 3rd month.

Sr. No.	Name of Medicine	Dosage	Frequency	Vehicle
1.	Syrup Plato Plan	2 teaspoons	BD	Plain Water
2.	Syrup Hemoplan	2 teaspoons	BD	Plain Water
3.	Tab. PravalPanchamritRas	2 tablets	BD	Plain Water
4.	Cap. Immune booster	1 capsule	BD	Plain Water
5.	Cap. Ashwangandha	1 capsule	BD	Plain Water
6.	Kumar KalyanRas	1 tablet	BD	Plain Water
7.	Tab. GandhakRasayan	1 tablet	BD	Plain Water
8.	Tab. SwaranVasantMaltiRas	1 tablet	BD	Plain Water

Results:-

Significant and rapid improvement in problems such as bruises, bleeding gums and nose, occasional blood in stools

First Follow-up Result (After 30 days):

The patient's parents reported that he was feeling good, and healthy, and the symptoms of ITP like itching, weakness, bruises, gum and nose bleeding, occasionally blood in stool had reduced after taking all the medicines for 30 days.

Second Follow-up Result (After 60 days):-

After following our prescription continuously for 60 days, the patient's parents saw an amazing change and more than 75% of symptoms like itching, weakness, bruises had reduced.

Third Follow-up Result (After 90 days):

After an ideal course of medications for 90 days (3 months) the patient is completely fine and has no symptoms of ITP.

Table 3:- Shows follow-up data up to one month after starting the drugs.

Sr. No.	Time/ Duration	Patient condition before Planet Ayurveda treatment	Patient condition after Planet Ayurveda treatment
1.	Ist month	8000(21-12-2019)	21000 (08-01-2020)
2.	2nd month		49000 (18-01-2020)
3.	3rd month		1,62,000 (11-03-2020)

Discussion:-

This case study describes a male patient who had ITP. In this case, tridosha vitiation is primarily associated with ITP. The patient took 1 capsule, 1 tablet and 2 teaspoons each of Syrup Platoplan, Syrup Hemoplan, Tab. GandhakaRasayan, Cap. Immune Booster, Tab. PravalPanchamrit Rasa, Tab. Balark Rasa, Kumar Kalyan Rasa, Cap. Ashwagandha and Tab. SwarnVasantMalti Rasa with plain water for 3 months.

Table 4:- The ingredients list for Plato Plan Syrup is given in detail.

Sr No	Sanskrit name	Common Name	Botanical Name	Ras	Vipaka	Veerya	Action
	ErandKarkati	Papaya	Carica Papaya	Katu, Tikta	Katu	Ushna	Pacifies vata and Kaphadosh a
	Wheatgrass	GodhumPatra	Triticumaestivum	Madhura	Madhur	Sheeta	Balances

					a		Vata and Pitta dosha
	Giloy	Guduchi	Tinosporacordifolia	Kshaya, Tikta	Madhura	Ushna	Balances all three doshas
	Amlaki	Amla	Emblicoefficialis	Five taste (Madhura, Amla, Lavana, Katu, Tikta, Kshaya)	Madhura	Sheeta	Balances all three doshas
	Ashwagandha	Ashwagandha	Withaniasomnifera	Katu, Tikta, Kshaya	Katu	Ushna	Balances all three dosha especially Vata and Kapha
	Jeevanti	Dodishak	Leptadeniareticulata	Madhura	Madhura	Sheeta	Balances all three dosha especially Vata and Pitta
	Shigru	Shobhanjana	Moringapterygospema	Katu, Tikta	Katu	Ushna	Balances Kapha and Vatadosha
	Draksha	Grape	Vitisvinifera	Madhura	Madhura	Sheeta	Balances Vata and Pitta dosha

Table 5:- Ayurvedic medicines used during treatment and their actions.

Sr. No.	Name of Medicines	Action
1.	Syrup Platoplan	<ul style="list-style-type: none"> It stimulates the bone marrow to produce platelets It also promotes blood purification It supports the immune system
2.	GandhakRasayan	<ul style="list-style-type: none"> It helps boost the immune system and flushes out toxins. Helps pacify pitta dosha
3.	Syrup Hemoplan	<ul style="list-style-type: none"> It is a natural blood purifier Increases haemoglobin Help in general weakness
4.	Immune booster	<ul style="list-style-type: none"> Supports healthy immune system Throws toxins from the body
5.	PravalpanchamritRas	<ul style="list-style-type: none"> It has calming effect Loss of appetite
6.	BalarkRas	<ul style="list-style-type: none"> Fever Strengthen body
7.	Kumar KalyanRas	<ul style="list-style-type: none"> It has immunomodulatory effects
8.	Cap. Ashwagandha	<ul style="list-style-type: none"> Increase platelet count by improving the functioning of immune system Immunosuppressive activity
9.	Swaranvasantmaltiras	<ul style="list-style-type: none"> It has immunomodulatory effects

Conclusion:-

The above case study shows that the symptoms of chronic ITP can be successfully treated according to the basic principles of Ayurveda. Moreover, this case helps in making a proper diagnosis. This study can aid in further research on the treatment of ITP with the help of Ayurveda principles. There was a significant improvement in all signs and symptoms of the disease and increase in platelet count after completion of treatment. This is an attempt to understand the concept of obliterating hemoptysis applicable in ITP.

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