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Etiopathological Study Of *Sothagata Vikrita Kleda* With Special Reference To Laboratory Parameters

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ABSTRACT: Background: *Kleda* is the functional fluid component of the body responsible for maintaining *Snigdhata*, *Mardavata*, and *Picchilata* of tissues and for supporting normal *Dhatu Poshana* and *Srotasa Pravahana*. Its pathological state, *Vikrita Kleda*, leads to abnormal fluid accumulation and plays a central role in the *Samprapti* of *Sotha*, a *Kleda-pradhana Vyadhi* characterized by *Utseda* due to *Tridosha Prakopa* and *Rasavaha Srotas Dushti*. Despite its importance, *Kleda* has largely remained a conceptual entity with limited objective evaluation. **Aim:** To establish *Sothagata Vikrita Kleda* as an etiopathological entity and to study its correlation with laboratory parameters in *Sotha*. **Materials and Methods:** This observational study included 100 patients (20 each of *Prameha*, *Sthoulya*, *Sotha*, *Kustha*, and *Vrana*). *Vikrita Kleda* was assessed using classical *Lakshanas* along with laboratory investigations including inflammatory markers, renal function tests, metabolic parameters, and protein status. **Results:** *Sotha* patients showed the highest expression of *Vikrita Kleda*, with *Utseda* (100%), *Anga Vivarnata* (95%), *Gaurava* (90%), and *Anavasthita Sotha* and *Ushma* (85%). Laboratory findings revealed raised ESR (70%), CRP (60%), renal and metabolic derangements, hypoproteinemia (50%), and hypoalbuminemia (40%), indicating impaired *Kleda Nishkramana* and *Dhatu Kshaya*. **Conclusion:** The study provides objective evidence that *Sothagata Vikrita Kleda* is a measurable and clinically significant pathological state.

Keywords: *Sotha*, *Sothagata Vikrita Kleda*, *Kleda*, , *ESR*, *CRP*, Oedema

INTRODUCTION: *Kleda* represents the fluid and moist component of the body that sustains *Snigdhata*, *Mardavata*, and *Picchilata* of tissues and maintains physiological balance. Though not described as an independent *Dhatu* or *Mala*, *Kleda* plays a crucial functional role in the body, particularly within *Rasa*, *Meda*, and *Mamsa Dhatu*, and is regulated mainly through *Mootravaha* and *Swedavaha Srotas*. When this

physiological balance is disturbed, *Vikrita Kleda* develops, leading to pathological fluid accumulation and impaired tissue metabolism, especially in *Kapha-pradhana* disorders[1]. *Sotha* is one such *Vyadhi* where deranged *Kleda* manifests prominently as *Utseda* (swelling), with involvement of *Rasa Dhatu* and obstruction of *Rasavaha Srotas* due to *Sanga* and *Vimargagamana*. Classical Ayurvedic texts describe *Sotha* as arising from *Tridosha Prakopa* caused by *Nidana Sevana*, resulting in localization of vitiated *Doshas* in either *Ekanga* or *Sarvanga* form. From a modern perspective, this correlates with oedema, where abnormal fluid accumulation occurs in interstitial spaces due to inflammatory, renal, metabolic, or hypoproteinemic mechanisms. Despite the central role of *Kleda* in the *Samprapti* of *Sotha*, its assessment has largely remained subjective and conceptual. The present study was therefore undertaken to establish *Sothagata Vikrita Kleda* as a definable etiopathological entity and to explore its correlation with objective laboratory parameters such as inflammatory markers, renal function tests, protein status, and metabolic indicators.

AIM and Objectives:

a) AIM:

- To establish the concept of *Sothagata Vikrita Kleda* and its role in the etiopathogenesis of different *Vyadhi.*

b) OBJECTIVE:

- To assess the *Sothagata Vikrita Kleda* as an etiopathological entity in *Sotha*
- To explore the probable correlation of *Sothagata Vikrita Kleda* with different laboratory parameters in *Sotha*

MATERIALS AND METHODS:

Study Design and Selection of Subjects: This clinical observational study was conducted at the Government. Ayurvedic College and Hospital, Jalukbari, Assam. Literary references were drawn from classical Ayurvedic texts, modern literature, recent journal articles, and credible online sources. A total of 100 patients (20 each of *Prameha, Sthoulya, Sotha, Kustha,* and *Vrana*) were selected randomly from the OPD and IPD. Both male and female patients, aged 18 to 70 years, exhibiting clinical features associated with *Sothagata Vikrita Kleda,* and who provided informed consent, were included.

Clinical Assessment: A specially designed clinical proforma and validated questionnaire were used to assess both subjective and objective parameters of *Sothagata Vikrita Kleda*. The questionnaire was developed from classical Ayurvedic descriptions and translated into patient-friendly language, featuring binary response options (Yes = 1, No = 0). Laboratory parameters were graded as usual (0), high (1), or low (2).

Diagnostic and Laboratory Investigations

Each patient underwent the following laboratory tests: TLC, ESR, CRP, Blood Urea, Serum Creatinine, Serum Uric Acid, Serum Total Protein, Serum Albumin and Serum TSH.

***Vikrita Kleda* Assessment Framework:** Since classical texts lack direct descriptions of *Kleda* features, assessment was based on Ayurvedic concepts of *Kapha Vriddhi and Ama*. A level was considered positive for *Vikrita Kleda* if four or more out of seven identified features were present. The proportion of subjective vs. objective findings and the dominance of specific types of *Kleda* were calculated accordingly.

Kleda: *Kleda* literally denotes moisture or wetness, derived from the Sanskrit root *klid* (to moisten), and is described in classical texts and dictionaries as humidity or dampness. In Ayurveda, Kleda represents the *Drava* (fluid) aspect of the body, functioning as an expression of *Jala Mahabhuta* and contributing to *Snigdhata* (unctuousness), *Mardavata* (softness), and *Picchilata* (stickiness) of tissues. Though not an independent *Dhatu* or *Mala*, it is a vital functional entity involved in fluid homeostasis, *Dhatu Poshana*, and proper *Srotasa* function, particularly in *Rasa*, *Meda*, and *Mamsa Dhatus*. Physiologically, balanced Kleda supports strength, skin nourishment, and metabolic harmony, while pathologically (*Vikrita Kleda*), it plays a significant role in the *Samprapti* of diseases such as *Prameha*, *Sthaulya*, *Sotha*, *Kustha*, and *Vrana*, often in association with *Kapha Dosha*, *Agnimandya*, and *Ama*. The primary seat of Kleda is *Meda Dhatu*, and its regulation occurs through *Mootravaha* and *Swedavaha Srotas*, with *Mutra* facilitating its elimination and *Sweda* aiding its tissue-level management[1, 2, 3].

SOTHA

Sotha is the spectrum of the diseases which is having the cardinal feature of *Utsedha* (swelling). This is thought to be caused by *Rasa Dhatu* involvement. This can happen either locally or half of the body or generalized[4]. Depending upon the site of the lesion, we can able to predict the involvement of different *Dhatu*. As far as affliction of *Srotas* is concerned, *Rasavaha Srotas* is primarily afflicted with *Sanga* and *Vimargagamana* as the nature of *Srotodushthi* happens during the course of the disease[5]. *Shvayathu* is classified under three categories, based on *Dosha- Vataja*, *Pittaja* and *Kaphaja*. Based on etiological factors- *Nija* and *Agantuja* and based on *Sthana- Ekanga* (located in only one limb) and *Sarvaja* (swelling all over the body) [6].

KLEDA* IN RELATION TO *SOTHA:

Śotha is a condition that arises from an imbalance of the *Doṣhas* and can manifest in any part of the body, particularly affecting the skin (*Tvak*) and muscles (*Māṃsa*). In Ayurveda, *Śotha* is described as generalized swelling of the body. Since the body is predominantly composed of fluid elements (*Jaleeya Dhātu*), *Udaka* (water component) plays a role in the development of *Śotha*. The balance of *Udaka* is maintained through the proper production, circulation, and elimination of *Kleda* (body moisture) [7].

Due to the indulgence in *Nidana Sevana*—which includes both *Nija* and *Agantuja Karana*—there occurs a *Prakopa* of the *Tridoshas (Vata, Pitta, and Kapha).* This *Doshik* imbalance leads to the involvement of the *Swasthana*, particularly the *Abhyantara Marga*. Concurrently, there may be obstruction in the *Bahya*

Sira Marga, particularly affecting the *Twacha*, leading to impaired circulation and stagnation. The aggravated *Vata* further disturbs the balance of *Kapha*, *Rakta*, and *Pitta*, thereby disseminating the vitiated doshas throughout the body. This vitiated state may localize either in the entire body (*Sarvanga*) or remain confined to a specific region (*Ekanga*). As a result, clinical features such as *Utseda* (swelling), *Sphitabhava* (pain), and other characteristic *Lakshanas* of *Sotha* manifest, indicate the pathological progression within the bodily systems[8]. References of *Kleda* in *Sotha* are mentioned in Table 1.

Oedema is described as an abnormal and excessive build-up of "free fluid" in the serous cavities and interstitial tissue spaces[9]. It refers to the abnormal buildup of fluid within the subcutaneous tissues or serous cavities, caused by an increase in the interstitial component of the extracellular fluid. This accumulation leads to visible swelling of the affected tissues. In many cases, a noticeable gain in body weight by several kilograms occurs before the clinical signs of oedema become apparent. 'Slow' pitting oedema (>40 seconds) is found in CCF in comparison to 'rapid' pitting oedema (<40 seconds) observed in hypoproteinaemia i.e. nephritic syndrome[10].

Table 1: References of *Kleda* in *Sotha*

SOTHA			
Charaka Samhita Sutra Sthana - 18 Trisothiya Adhaya	*Sushruta Samhita SutraSthana - 17 Amapakwashaniya Adhaya*	*Astanga Hridaya Chikitsa Sthana - 6 Chardi Hridaroga Trishna Chikitsitam*	*Madhava Nidanam -36 Sotha Nidanam*
Charak Sanhita Chikitsa Sthan -12 Kshayathu Chikitsitam	*Sushrut Samhita Sutra Sthana - 18 Vrana Lepana Bandha Vidhi Adhaya*		
Charaka Samhita Chikitsa Sthana -13 Udara Chikitsitam	*Sushruta Samhita Nidana Sthana -6 Prameha Nidana*		

RESULTS AND OBSERVATION: In this study, total 100 pre-diagnosed subjects with 20 subjects each of *Prameha*, *Sthoulya*, *Sotha*, *Kustha* and *Vrana* were taken for the study.

Table 2: Incidence of *Sothagata Vikrita Kleda*

Sothagata Vikrita Kleda	***Prameha***		***Sthoulya***		***Sotha***		***Kustha***		***Vrana***	
	(n=20)		**(n=20)**		**(n=20)**		**(n=20)**		**(n=20)**	
	No of Patient	%	No of Patient	%	No of Patient	%	No of Patient	%	No of Patient	%
Utseda	1	5	2	10	20	100	2	10	5	25
Sarvanga Sotha	0	0	0	0	3	15	0	0	0	0
Ekanga Sotha	0	0	1	5	15	75	4	20	4	20
Gaurava	2	10	2	10	18	90	2	10	1	5
Anavasthitwa Sotha	0	0	1	5	17	85	0	0	0	0
Ushma	2	10	1	5	17	85	3	15	0	0
Anga Vivarnata	0	0	3	15	19	95	2	10	0	0

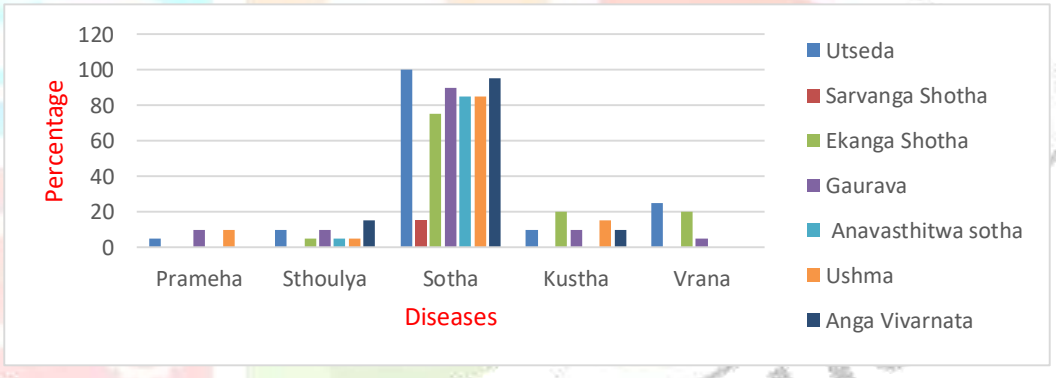

Fig. 1: Incidence of *Vikrita Kleda in Sotha* in 20 subjects of *Prameha, Sthoulya, Sotha, Kustha* and *Vrana* (n=100)

The study shows that the *Sotha* subjects are having the highest prevalence of *Vikrita Kleda* laxanas with *Utseda* (100%) followed by *Anga vivarnata* (95%), *Gaurava* (90%), *Anavasthita Sotha* (85%), *Ushma* (85%), *Ekanga Sotha* (75%), *Sarvanga Sotha* (15%).

Table 3: Incidence of TLC in *Prameha, Sthoulya, Sotha, Kustha* & *Vrana*

TLC	***Prameha***		***Sthoulya***		***Sotha***		***Kustha***		***Vrana***	
	(n=20)		**(n=20)**		**(n=20)**		**(n=20)**		**(n=20)**	
	No of Patient	%	No of Patient	%	No of Patient	%	No of Patient	%	No of Patient	%
Within Normal Limit	15	75	18	90	16	80	14	70	13	65
High	4	20	2	10	4	20	4	20	7	35
Low	1	5	0	0	0	0	2	10	0	0

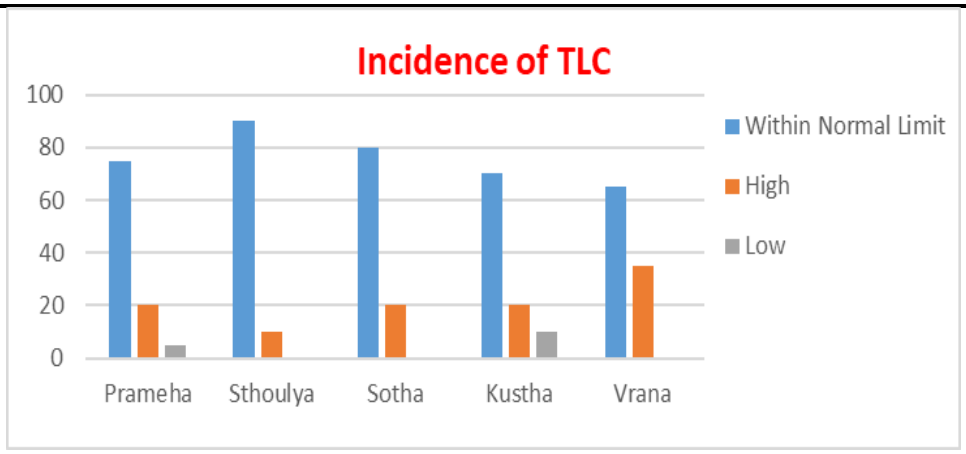

Fig. 2: Incidence of TLC in 20 subjects of *Prameha, Sthoulya, Sotha, Kustha* and *Vrana* (n=100)

The study shows that in *Prameha*, 20% show high TLC, and 5% have low TLC. In *Sthoulya*, 10% is high and 0% low. In *Sotha*, 20% is high and 0% low. In *Kustha*, 20% is high and 10% low. In *Vrana*, 35% is high and 0% low.

Table 4: Incidence of ESR in *Prameha, Sthoulya, Sotha, Kustha* and *Vrana*

ESR	*Prameha* (n=20)		*Sthoulya* (n=20)		*Sotha* (n=20)		*Kustha* (n=20)		*Vrana* (n=20)	
	No of Patient	%	No of Patient	%	No of Patient	%	No of Patient	%	No of Patient	%
Within Normal Limit	9	45	10	50	6	30	6	30	5	25
High	11	55	8	40	14	70	14	70	15	75
Low	0	0	2	10	0	0	0	0	0	0

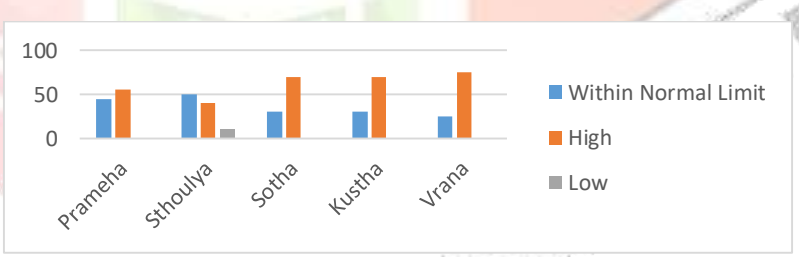

Fig. 3: Incidence of ESR in 20 subjects of *Prameha, Sthoulya, Sotha, Kustha* and *Vrana* (n=100)

In *Prameha*, 55% of subjects have high ESR, 45% are within normal limits, and 0% is low. In *Sthoulya*, 40% have high ESR, 50% are within normal limits, and 10% are low. In *Sotha*, 70% have high ESR, 30% are within normal limits, and 0% is low. In *Kustha*, 70% have high ESR, 30% are within normal limits, and 0% is low. In *Vrana*, 75% have high ESR, 25% are within normal limits, and 0% is low.

Table 5: Incidence of CRP in *Prameha, Sthoulya, Sotha, Kustha* and *Vrana*

CRP	*Prameha* (n=20)		*Sthoulya* (n=20)		*Sotha* (n=20)		*Kustha* (n=20)		*Vrana* (n=20)	
	No of Patient	%	No of Patient	%	No of Patient	%	No of Patient	%	No of Patient	%
Within Normal Limit	18	90	19	95	8	40	17	85	11	55
High	2	10	1	5	12	60	3	15	9	45
Low	0	0	0	0	0	0	0	0	0	0

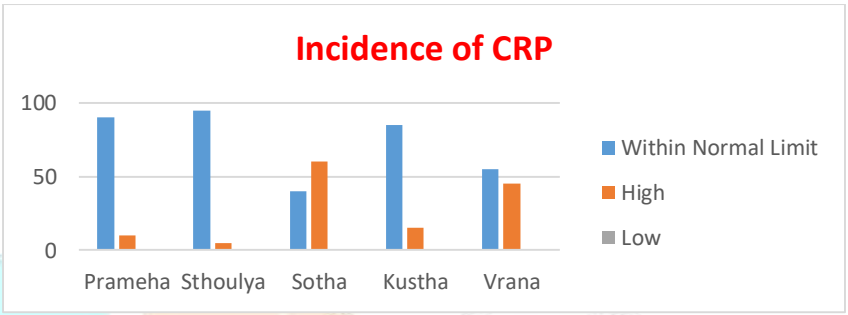

Fig. 4: Incidence of CRP in 20 subjects of *Prameha, Sthoulya, Sotha, Kustha* and *Vrana* (n=100)

The study shows that in *Prameha* 90% are within normal limits, 10% are high, and 0% are low. In *Sthoulya*, 95% is within normal limits, 5% are high, and 0% is low. In *Sotha*, 40% are within normal limits, 60% are high, and 0% are low. In *Kustha*, 45% are within normal limits, 55% are high, and 0% are low. In *Vrana*, 55% are within normal limits, 45% are high, and 0% are low.

Table 6: Incidence of Blood Urea in *Prameha, Sthoulya, Sotha, Kustha* and *Vrana*

Blood Urea	*Prameha* (n=20)		*Sthoulya* (n=20)		*Sotha* (n=20)		*Kustha* (n=20)		*Vrana* (n=20)	
	No of Patient	%	No of Patient	%	No of Patient	%	No of Patient	%	No of Patient	%
Within Normal Limit	6	30	17	85	15	75	19	95	19	95
High	13	65	3	15	5	25	1	5	1	5
Low	1	5	0	0	0	0	0	0	0	0

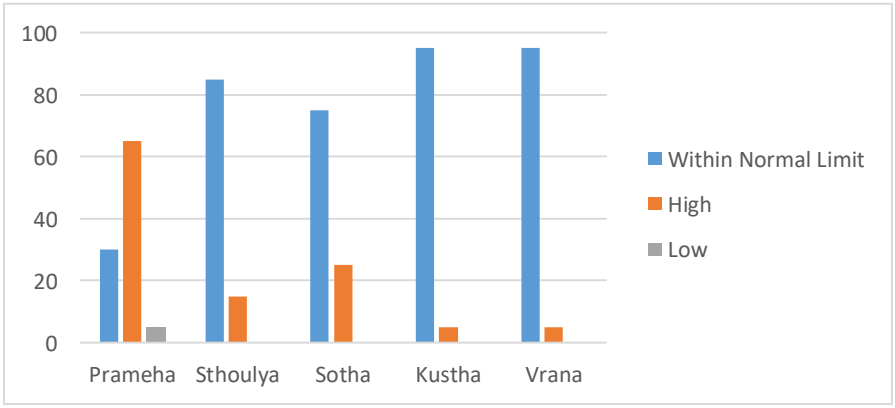

Fig. 5: Incidence of Blood Urea in 20 subjects of *Prameha, Sthoulya, Sotha, Kustha* and *Vrana* (n=100)

In *Prameha*, 30% of subjects have normal Blood Urea levels, 65% have high levels, and 5% have low levels. In *Sthoulya*, 85% have normal levels, 15% had high levels, and 0% has low levels. In *Sotha*, 75% have normal levels, 25% had high levels, and 0% has low levels. In *Kustha*, 95% have normal levels, 5% have high levels, and 0% have low levels. In *Vrana*, 95% have normal levels, 5% have high levels, and 0% have low levels. In *Prameha*, there is significantly higher incidence of elevated Blood Urea (65%) compared to other conditions.

Table 7: Incidence of Serum Creatinine in *Prameha, Sthoulya, Sotha, Kustha* and *Vrana*

Serum Creatinine	*Prameha* (n=20)		*Sthoulya* (n=20)		*Sotha* (n=20)		*Kustha* (n=20)		*Vrana* (n=20)	
	No of Patient	%	No of Patient	%	No of Patient	%	No of Patient	%	No of Patient	%
Within Normal Limit	6	30	17	85	12	60	19	95	20	100
High	14	70	3	15	8	40	1	5	0	0
Low	0	0	0	0	0	0	0	0	0	0

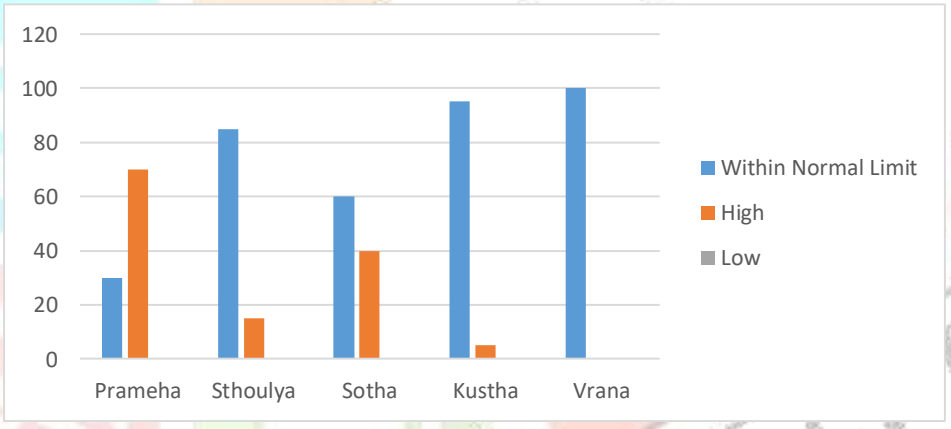

Fig. 6: Incidence of Serum Creatinine in 20 subjects of *Prameha, Sthoulya, Sotha, Kustha* and *Vrana* (n=100)

In *Prameha*, 30% have normal Serum Creatinine levels, 70% had high levels, and 0% has low levels. In *Sthoulya*, 85% have normal levels, 15% had high levels, and 0% has low levels. In *Sotha*, 60% have normal levels, 40% had high levels, and 0% has low levels. In *Kustha*, 95% have normal levels, 5% have high levels, and 0% have low levels. In *Vrana*, 100% have normal levels, 0% had high levels, and 0% has low levels.

Table 8: Incidence of Serum Uric Acid in *Prameha, Sthoulya, Sotha, Kustha* and *Vrana*

Serum Uric Acid	*Prameha* (n=20)		*Sthoulya* (n=20)		*Sotha* (n=20)		*Kustha* (n=20)		*Vrana* (n=20)	
	No of Patient	%	No of Patient	%	No of Patient	%	No of Patient	%	No of Patient	%
Within Normal Limit	7	35	16	80	10	50	19	95	17	85
High	13	65	4	20	10	50	1	5	3	15
Low	0	0	0	0	0	0	0	0	0	0

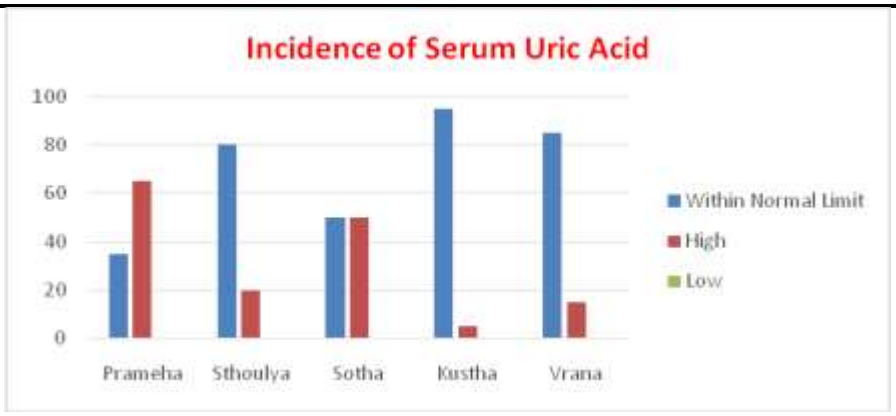

Fig. 7: Incidence of Serum Uric Acid in 20 subjects of *Prameha, Sthoulya, Sotha, Kustha* and *Vrana* (n=100)

In *Prameha,* 65% of subjects have elevated uric acid levels and 35% are within normal ranges. No subjects have low levels. In *Sthoulya,* 80% have normal levels, 20% have high levels, and none have low levels. In *Sotha,* 50% have normal levels, 50% have high levels, and none have low levels. In *Kustha,* 95% have normal levels, 5% have high levels, and none have low levels. In *Vrana,* 85% have normal levels, 15% have high levels, and none have low levels.

Table 9: Incidence of Serum Total Protein in *Prameha, Sthoulya, Sotha, Kustha* and *Vrana*

Total Protein	*Prameha* (n=20)		*Sthoulya* (n=20)		*Sotha* (n=20)		*Kustha* (n=20)		*Vrana* (n=20)	
	No of Patient	%	No of Patient	%	No of Patient	%	No of Patient	%	No of Patient	%
Within Normal Limit	20	100	20	100	10	50	20	100	20	100
High	0	0	0	0	0	0	0	0	0	0
Low	0	0	0	0	10	0	0	0	0	0

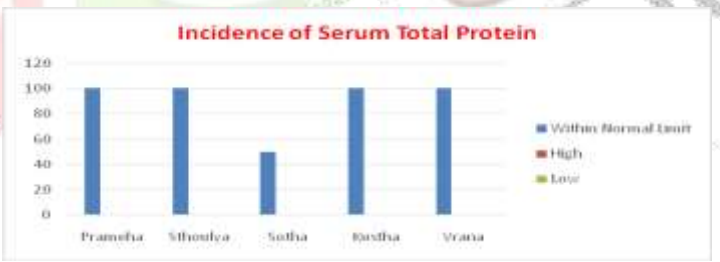

Fig. 8: Incidence of Total Protein in 20 subjects of *Prameha, Sthoulya, Sotha, Kustha* and *Vrana* (n=100)

All subjects in *Prameha*, *Sthoulya*, *Kustha*, and *Vrana* groups had Serum total protein within the normal limit (100%). In the *Sotha* group, only 50% of subjects (10 out of 20) had Total protein within normal limits. There were no cases of increased Serum Total Protein in any of the groups.

Table 10: Incidence of Serum Albumin in *Prameha, Sthoulya, Sotha, Kustha* and *Vrana*

Serum Albumin	*Prameha* (n=20)		*Sthoulya* (n=20)		*Sotha* (n=20)		*Kustha* (n=20)		*Vrana* (n=20)	
	No of Patient	%	No of Patient	%	No of Patient	%	No of Patient	%	No of Patient	%
Within Normal Limit	20	100	19	95	8	40	20	100	20	100
High	0	0	0	0	0	0	0	0	0	0
Low	0	0	1	5	12	0	0	0	0	0

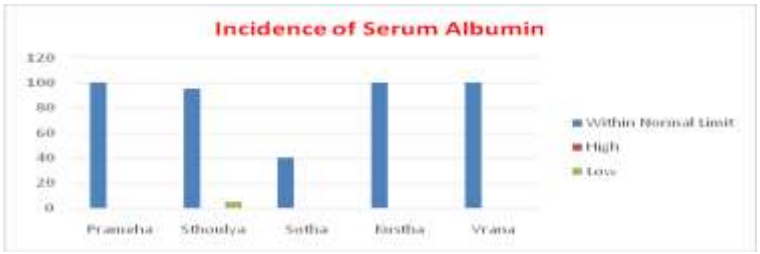

Fig. 9: Incidence of Serum Albumin in 20 subjects of *Prameha, Sthoulya, Sotha, Kustha* and *Vrana* (n=100)

The study demonstrates that most subjects (100%) across all situations have serum albumin. Except for *Sotha*, which is 60% within the usual range and 40% below it. There were no reports of elevated serum albumin.

Table 11: Incidence of Serum TSH in *Prameha, Sthoulya, Sotha, Kustha* and *Vrana*

Serum TSH	*Prameha* (n=20)		*Sthoulya* (n=20)		*Sotha* (n=20)		*Kustha* (n=20)		*Vrana* (n=20)	
	No of Patient	%	No of Patient	%	No of Patient	%	No of Patient	%	No of Patient	%
Within Normal Limit	15	75	10	50	16	80	16	80	20	100
High	5	25	7	35	4	20	2	10	0	0
Low	0	0	3	15	0	0	2	10	0	0

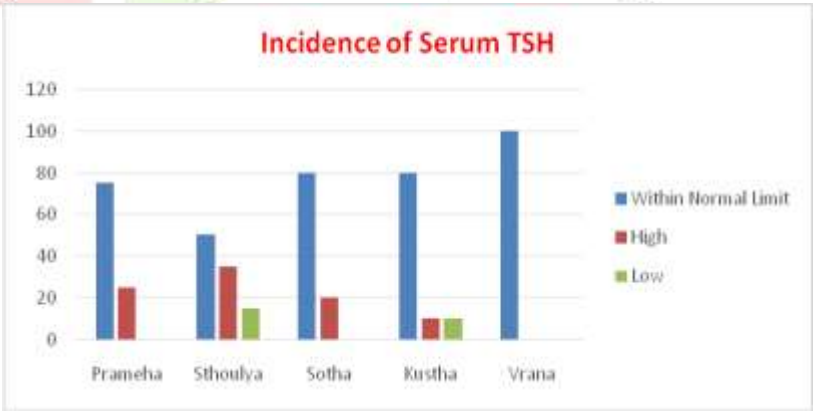

Fig. 10: Incidence of Serum TSH in 20 subjects of *Prameha, Sthoulya, Sotha, Kustha* and *Vrana* (n=100)

The study shows that *Prameha* and *Sthoulya* have a notable percentage of subjects with high TSH (25% and 35%, respectively), indicating possible hypothyroidism. *Kustha* also shows 10% high and 10% low TSH, suggesting thyroid dysfunction variability.

DISCUSSION:

Assessment of *Vikrita Kleda* in *Sotha*: The study reaffirms that *Sotha* is a classical *Kleda-pradhana Vyadhi*, where excessive fluid accumulation, tissue discoloration, warmth, and instability of swelling are hallmark clinical features. The practically 100% incidence of *Utseda* and *Anga Vivarnata* particularly indicates the strong involvement of *Vikrita Kleda* and *Pitta/Rakta Dushti* in the localized inflammatory process.

Assessment of TLC in *Prameha, Sthoulya, Sotha, Kustha* and *Vrana:* Few incidences of elevated TLC in *Vrana* and *Prameha* highlight a relation with chronic conditions or active inflammation.

Assessment of ESR in *Prameha, Sthoulya, Sotha, Kustha* and *Vrana*: High ESR is prevalent across all conditions, with *Vrana* and *Sotha* showing the highest incidence (75% and 70%, respectively). This suggests significant inflammation or chronic disease activity in these groups. *Sthoulya* stands out with 10% low ESR, indicating some variability.

Assessment of CRP in *Prameha, Sthoulya, Sotha, Kustha* and *Vrana*: CRP levels are mostly within normal limits for *Prameha* and *Sthoulya*, indicating less acute inflammation. However, *Sotha* shows the highest proportion of elevated CRP (60%), suggesting acute inflammatory activity, followed by *Kustha* (55%) and *Vrana* (45%).

Assessment of Blood Urea in *Prameha, Sthoulya, Sotha, Kustha* and *Vrana:* In *Prameha* shows a significantly higher incidence of elevated Blood Urea (65%) compared to other conditions, suggesting a potential association with kidney dysfunction in diabetic subjects.

Assessment of Serum Creatinine in *Prameha, Sthoulya, Sotha, Kustha* and *Vrana:* *Prameha* again shows a high incidence of elevated Serum Creatinine (70%), indicating a strong link to renal impairment, more pronounced than in other conditions.

Assessment of Serum Uric acid in *Prameha, Sthoulya, Sotha, Kustha* and *Vrana*: High uric acid is most prevalent in *Prameha* (65%) and *Sotha* (50%), indicating a stronger metabolic link in these conditions, while *Sthoulya*, *Vrana*, and especially *Kustha* show lower incidence. No low uric acid levels were observed in any group.

Assessment of Serum Total Protein in *Prameha, Sthoulya, Sotha, Kustha* and *Vrana*: Serum total protein was normal in all *Prameha*, *Sthoulya*, *Kustha*, and *Vrana* subjects, while only 50% of *Sotha* cases were normal, suggesting hypoproteinemia in the remainder—likely linked to reduce oncotic pressure commonly seen in *Sotha*.

Assessment of Serum Albumin in *Prameha, Sthoulya, Sotha, Kustha* and *Vrana*: Most subjects (100%) across all conditions have serum albumin within the normal limit, except for *Sotha* (60% within normal, 40% low). No cases of high serum albumin were reported.

Assessment of Serum TSH in *Prameha, Sthoulya, Sotha, Kustha* and *Vrana*: The higher incidence of abnormal TSH in *Prameha* and *Sthoulya* warrants thyroid function screening in these subjects, as

hypothyroidism could exacerbate metabolic issues. The mixed TSH levels in *Kustha* may require further investigation into thyroid-skin disease relationships.

CONCLUSION: The findings of the present study establish *Sothagata Vikrita Kleda* as a distinct and measurable etiopathological entity in the manifestation of *Sotha*. Clinically, *Utseda* was observed in 100% of *Sotha* subjects, followed by *Anga Vivarnata* in 95%**,** *Gaurava* in 90%**,** *Anavasthita Sotha* in 85%**,** *Ushma* in 85%**,** *Ekanga Sotha* in 75%, *and Sarvanga Sotha in 15%*, confirming that deranged *Kleda* is the core pathological factor responsible for tissue swelling, instability, and discoloration. These findings strongly support the classical Ayurvedic view of *Sotha* as a *Kleda-pradhana Vyadhi* arising from *Kapha-pradhana Tridosha Dushti, Agnimandya*, and *Srotorodha*.

The laboratory observations further validated this concept. Elevated inflammatory markers in *Sotha*—with 70% raised ESR and 60% raised CRP—correlate with *Ama* involvement and *Rakta-Pitta Dushti* at the tissue level. Renal and metabolic parameters showed that 25% of *Sotha* patients had elevated blood urea, 40% had raised serum creatinine, and 50% had high serum uric acid, indicating impaired *Kleda Nishkramana* through *Mootravaha Srotas*. Additionally, 50% of *Sotha* patients had reduced total protein and 40% had hypoalbuminemia, reflecting loss of *Dhatu Sara* and reduced *Sama Guna*, which directly contributes to persistent fluid retention and *Utseda*.

When compared across disease groups, *Prameha* showed maximum renal derangement (blood urea 65%**,** creatinine 70%**,** uric acid 65%**),** *Vrana* showed highest inflammatory response (ESR 75%**,** CRP 45%), while *Sotha* uniquely demonstrated a combined pattern of inflammation, protein loss, and fluid imbalance—highlighting its strong association with *Vikrita Kleda*.

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