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

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ABSTRACT

Background: *Kustha* is a chronic dermatological disorder described in Ayurveda as a *Chirakari Vyadhi* involving vitiation of *Tridosha* with predominant affliction of *Tvak, Rakta, Mamsa,* and *Lasika*. A key factor in its *Samprapti* is *Kleda*, the fluid functional component of the body, which when vitiated (*Vikrita Kleda*), accumulates in *Jaliya Dhatus* and leads to clinical manifestations such as *Kandu*, *Srava*, *Vivarnata*, and chronic inflammation. Although classical texts emphasize this role of *Kleda*, its clinical assessment has largely remained subjective and insufficiently correlated with objective markers. **Aim:** To establish *Kusthagata Vikrita Kleda* as a definable etiopathological entity in *Kustha* and to explore its correlation with laboratory parameters. **Materials and Methods:** An observational clinical study was conducted on 100 patients (20 each of *Prameha*, *Sthoulya*, *Sotha*, *Kustha*, and *Vrana*). Assessment of *Vikrita Kleda* was done using classical *Lakshanas* supported by laboratory investigations including TLC, ESR, and CRP. Presence of *Vikrita Kleda* was considered when four or more classical features were observed. **Results:** *Kustha* patients showed prominent *Kleda Lakshanas*, with *Kandu* in 80%, *Daha* in 50%, *Anga Vivarnata* in 35%, and *Srava sahita Kandu* in 30% of cases. Laboratory evaluation revealed elevated ESR in 70% and CRP in 55% of *Kustha* patients, indicating persistent inflammatory activity and *Ama* involvement, while 20% showed raised TLC suggestive of immune-mediated pathology. **Conclusion:** The study provides objective clinical and laboratory evidence that *Kusthagata Vikrita Kleda* is a measurable and significant etiopathological factor in *Kustha*.

Keywords: *Kustha, Kleda, Vikrita Kleda, Kusthagata Vikrita Kleda,* ESR, CRP.

INTRODUCTION: *Kustha* represents a group of chronic and often distressing disorders of the skin in which both structural integrity and functional harmony of *Twak* are disturbed. Classical Ayurvedic texts describe *Kustha* as a *Chirakari Vyadhi* involving simultaneous vitiation of *Tridosha* along with *Tvak*, *Rakta*, *Mamsa*, and *Lasika*, resulting in diverse manifestations such as discoloration, itching, exudation, and disfigurement. Central to this pathological process is *Kleda*—the fluid and moist functional component of the body—which, when vitiated, accumulates in the *Jaliya Dhatus* and creates a milieu conducive to chronic inflammation and tissue degeneration. In *Kustha*, *Vikrita Kleda* arises predominantly due to *Kapha Prakopa* and systemic circulation of vitiated *Doshas*, leading to *Shithilata* of tissues and persistent exudative changes in the skin[1, 2, and 3]. While this concept is well established in classical literature, its assessment in clinical practice has largely remained subjective. The present study was therefore undertaken to explore *Kusthagata Vikrita Kleda* as a definable etiopathological entity and to correlate its classical features with objective laboratory markers of inflammation.

AIM and Objectives:

a) AIM:

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

b) OBJECTIVE:

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

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 *Kusthagata 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 *Kusthagata 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 and CRP

***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.

KUSTHA:

Kustha is a spectrum of diseases where we can observe symptoms related to integumentary system. *Kustha* involves the involvement of all three *Dosha* and is chronic disease i.e. *Chirakari Vikara* or slowly manifesting disease[4]. *Kustha* is categorised under *Adibala Pravritta Vikara* of *Adhyatmaka* as per classification of Sushruta[5]. *Kustha* is often classified as *Asadhya Vikara,* depending on the severity of the sickness. As per *Shabda Kalpa Druma*, *Kustha* is a spectrum of diseases where disturbances in *Shonita* or *Rakta* of the individual occurs. This may result in abnormalities in the functions of *Twak* in the form of discolouration, itching, disfiguration or general symptoms such as raised body temperature or weight loss etc[6]. The *Kustha* is of seven types or 18 types or *Asamkheyam* (innumerable). Example-*Piplu, Vyanga* and other disease does not include under these 18 types but affects the skin. So far, such disease included skin as main area of involvement in disease was explained in this context[7]. The vitiated three *Dosha* and *Tvaka, Rakta, Mamsa* etc gets involved in pathogenesis of *Kustha*[8].

***Kleda* in relation to *Kustha*:**

The pathological process begins with the *Tridosha Prakopa*, with a predominance of *Kapha Dosha*, which initiates systemic involvement through *Sarvasharira Sanchara*—the circulation of vitiated doshas throughout the entire body. This systemic movement particularly affects the *Twacha* (skin), *Rakta* (blood), *Mamsa* (muscle), and other *Jaliya Dhatus* (fluid-rich tissues) within the body. These tissues, upon exposure to the aggravated doshas, especially *Kapha*, become vitiated and undergo *Shithilata* (loss of tone or structural integrity), leading to a disturbance in their normal function. This dysfunction results in excessive *Kleda Utpatti* (formation of pathological moisture or exudate), which in turn contributes to the development of *Kotha* (ulcerative or necrotic lesions) in the *Twacha* and potentially other anatomical sites. The cumulative effect of these pathological changes manifests as *Kustha*. *Dosha* specific features of the diagnosis of *Dosha* dominance in *Kustha,* complications of *Kustha* and management of *Pitta* dominant *Kustha* are mentioned in relation to *Kleda* [9, 10, 11].

Dermatological disorders, or skin diseases, comprise a diverse range of conditions that can affect the skin, hair, nails, and mucous membranes. As the largest organ of the human body, the skin is essential for protection against external insults, regulation of body temperature, and the perception of sensory stimuli. Disruptions in its structure or function can lead to various clinical manifestations, ranging from mild rashes to life-threatening systemic illnesses. Understanding the classification, underlying causes and pathophysiological mechanisms of skin diseases is essential for accurate diagnosis and effective management[12].

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

KUSTHA			
Charaka Samhita	***Sushruta Samhita***	***Astanga Hridaya***	***Madhava Nidana***
Charak Sanhita Nidana Sthana -5 Kustha Nidanam	*Sushrut Sanhita Nidana Sthana- 5 Kustha Nidanam*	*Astanga Hridaya Nidana Sthana-14 Kustha Switra Krimi Nidanam*	*Madhava Nidana- 49 Kustha Nidanam*
Charaka Samhita Chikitsa Sthana -7 Kustha Chikitsitam	*Sushruta Samhita Chikitsa Sthana-9 Kustha Chikitsitam*		
	Sushruta Samhita Chikitsa Sthana-10 Maha Kustha Chikitsitam		

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*** **(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	%
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

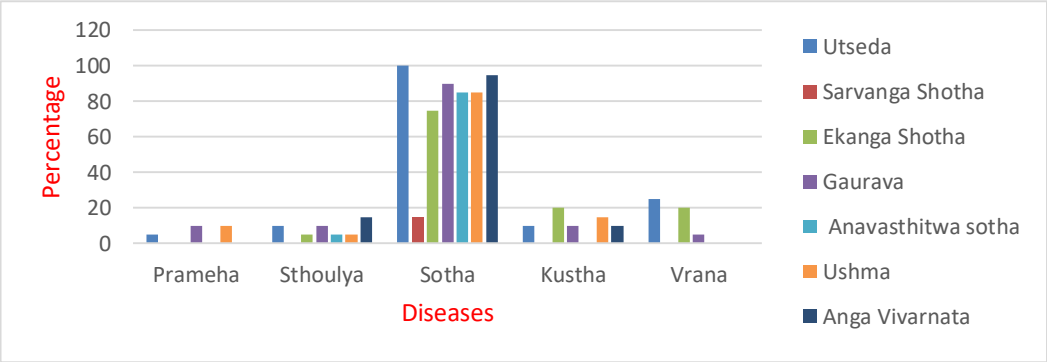

Fig. 1: Incidence of *Vikrita Kleda in Sotha* in 20 subjects of *Prameha, Sthoulya, Sotha, Kustha* and *Vrana* (n=100)

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* (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	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

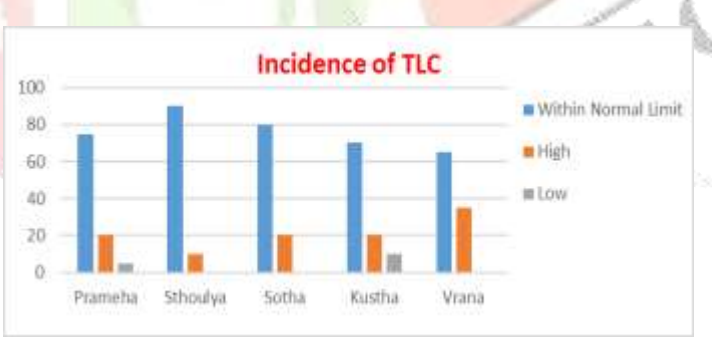

Fig. 2: Incidence of TLC in 20 subjects of *Prameha, Sthoulya, Sotha, Kustha* and *Vrana* (n=100)

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

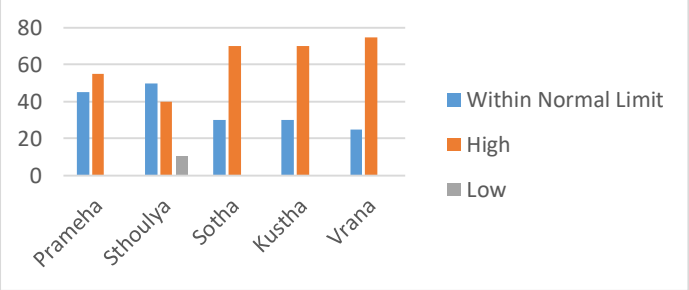

Fig. 3: Incidence of ESR in 20 subjects of *Prameha, Sthoulya, Sotha, Kustha* and *Vrana* (n=100)

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

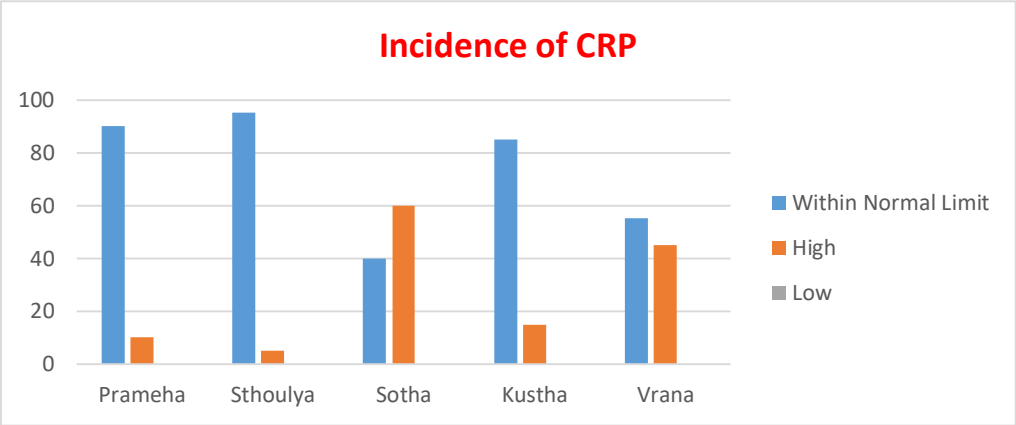

Fig. 4: Incidence of CRP in 20 subjects of *Prameha, Sthoulya, Sotha, Kustha* and *Vrana* (n=100)

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.

DISCUSSION:

Assessment of *Vikrita Kleda* in *Kustha*: The study confirms that *Kustha* is a *Kleda-pradhana Vyadhi*, especially due to involvement of *Tvak, Rakta, Mamsa,* and *Lasika*, all of which are *Dhatus* where *Kleda* can accumulate and manifest as exudation, discoloration, foul smell, and chronic inflammation.

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%).

CONCLUSION: The present study establishes *Kusthagata Vikrita Kleda* as a clinically demonstrable and etiopathologically significant factor in the manifestation of *Kustha*. Among the classical *Lakshanas* of *Vikrita Kleda*, *Kandu* was observed in 80% of *Kustha* patients, followed by *Daha* in 50%, *Anga Vivarnata* in 35%, *Srava sahita Kandu* in 30%, *Gaurava* in 20%, *and Gandha in* 15%. The laboratory observations further strengthen this relationship. Raised inflammatory markers were prominent in *Kustha*, with elevated ESR in 70% and CRP in 55% of cases, indicating persistent inflammatory activity and underlying *Ama* involvement.

Although total leukocyte count remained within normal limits in most patients, 20% of *Kustha* subjects showed elevated TLC, suggesting ongoing inflammatory or immune-mediated pathology.

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