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A Literature Review on Stevens Johnson Syndrome With Special Reference To *Visarpa.*

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ABSTRACT

Stevens-Johnson syndrome and toxic epidermal necrolysis are acute, rare, and potentially fatal skin reactions involving loss of skin and in some cases mucosal membranes accompanied by systemic symptoms. Medications are causative in over 80 percent of cases. Stevens-Johnson syndrome and toxic epidermal necrolysis are distinguished based on the extent of the detached skin surface area.

Many skin diseases are mentioned in *Ayurvedic classical texts*. Most of the skin diseases are caused due to *Vata, Pitta* and *kapha dosha* vitiations. while some are *Raktaja* and *Agantuja* (Foreign agents). Whenever the body comes in contact with any form of *asatmya ahara,vihara* or *aushadha* those can result in manifestation of various disease. *Visarpa* is one among such condition. The purpose of this review is to study stevens johnson syndrome in *Ayurvedic* perspective and correlate it with *Ayurvedic Twacha vikara.*

1. INTRODUCTION:

Stevens-Johnson Syndrome (SJS) is acute hypersensitivity reaction characterised by cutaneous and mucosal necrosis. The condition affects 6.3 and 0.5 per 100,000 hospitalized children per year for Stevens-Johnson Syndrome.[1] It represent a hypersensitivity reaction to a precipitating cause, usually infectious organisms or drugs. Although several classification schemes have been reported, the simplest classification breaks the disease down as follows[2] :

1. Stevens-Johnson syndrome: A minor form of toxic epidermal necrolysis, with less than 10% body surface area (BSA) detachment
2. Overlapping Stevens-Johnson syndrome/Toxic Epidermal Necrolysis (TEN): Detachment of 10-30% of the BSA
3. Toxic epidermal necrolysis: Detachment of more than 30% of the BSA

The mortality rate of Toxic Epidermal Necrolysis (TEN) can be up to three times higher than that of Stevens-Johnson syndrome because of the extensive skin involvement.

SJS-TEN is drug induced in 72-90% cases and idiopathic in 5-17% cases. Drugs are the most common cause of Stevens-Johnson syndrome.[1]

- Antibiotics especially Penicillin, cephalosporins, sulfonamides, macrolides, and fluoroquinolones.
- Antiepileptics (Carbamazepine, phenytoin, phenobarbitone,valproic acid.)
- Anti-inflammatory (Nonsteroidal anti-inflammatory drugs, paracetamol and Nimesulide.
- Allopurinol
- Corticosteroids

In *Ayurveda,* allergic manifestation is mentioned under the concept of *satmya-asatmya.* Exposure to *asatmya ahara-vihara* and interaction with various toxic substances (allergens) are the causes of its

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manifestation. *Visarpa* is among such *asatmya hetujanya vyadhis.Visarpa* is having rounded or circular patches, producing burning of the skin due to vitation of blood (Rakta) and as dangerous as the poison of a Snake (quick spreading).[4] *Visarpa* is an *Aashukarvyadhi* (Acute disease) of skin. This is a serious disease with virulent symptoms and lesions look as bright as the "Burning Sun". This is known as *Visarpa* as it spreads in various ways or else as *parisarpa* because it spreads all around or in whole body.The clinical manifestation of Stevens- Johnson syndrome shows similarities with that of *visarpa.*

Review on *Visarpa* – Etymology

The word *Visarpa* is formed from two words '*Vi'* and '*Sarpa'*. 'Vi' stands for *'vividha'* meaning 'different(directions)',and '*sarpa*'stands for '*sarpana*'meaning 'spreading'.Since this ailment spreads either upwards or downwards or sidewards or in all these three directions,it is called *visarpa*. The seven dhatus which give rise to *visarpa* are *Rakta* (blood), *lasika* (lymph), *tvak* (skin), mamsa (muscle tissue), and three *doshas vata,pitta* and *kapha.* Without *rakta* (blood) and *pitta visarpa* never develops to the born one. It depends upon blood and develops from blood and *pitta* is situated in the blood. Due to *vata* ,*pitta* and *kapha*; (three) due to combination of two *doshas* and (one) due to combination of all the three *doshas*,these seven types of *visarpa* has been described.[5]

Classification of Visarpa -

- *Vataja Visarpa*
- *Pittaja Visarpa*
- *Kaphaja Visarpa*
- *Agni Visarpa*
- *Kardama Visarpa*
- *Granthi Visarpa*
- *Sannipataja Visarpa*

Depending upon the location, *visarpa* is of three types as follows

1. *Bahishrita (visarpa* located in the periphery);
2. *Abhyantarsrita (visarpa* located in the interior part of the body); and
3. *Ubhayasamsrita (visarpa* located in both the periphery and the interior part of the body)

Nidana –

Etiological factors of *Visarpa* can be either *Aharaja* or *Viharaja –*

Viharaja nidan-life style related, injury, poison toxins, burns etc. some of these *Nidana* causes vitiations of the *Dosha* and *Khavaigunya* (disease prone condition) in *Dhatu* and some cause direct vitiation of *Dosha* and *Dhatu* leading to *Visarpa.*[5]

Aharaja nidan include-

1. *Aati lavana sevan*-excessive intake of salty diet.
2. *Atyammla sevan*-excessive consumption of sour diet.
3. *Katuushna aati sevan*-excessive use of pungent and spicy diet.
4. *Asatmya Aushadha.*
5. *Vidahi and viruddha aana sevan.*
6. *Til,kulatha,mansa,lahsuna aaati sevan.*
7. *Visha (Poison),Vata dosha and Agni dosha.*

Poorvarupa-

Fever (Jwara), Cough (Kasa)

Roopa –

Vaataj-

Giddiness, *davathu* (burning sensation in eyes, etc.,), thirst, pricking pain, malaise, cramps, fever, *tamaka* (a type of asthma), bronchitis, pain in the bones and joints and their dislocation, shivering, anorexia and a feeling as if ants are crawling over the body.

Pittaj-

Fever, Breaking pain in the body, headache, morbid thirst, fainting, unconsciousness, vomiting, anorexia, excessive sweating and burning sensation in the interior part of the body, delirium, turbidity of the eyes, sleeplessness, giddiness, Green and yellow coloration of the eyes, urine and stool;Green and yellow vision of objects. The space in which this disease spreads, becomes either coppery coloured, green, yellow, blue, black or red; This space becomes full of pustules which are excessively swollen and associated with excessive burning sensation and breaking pain.

Kaphaj-

Feeling of chill, cold-fever, heaviness, anorexia, sweet taste in the mouth, adherence of sticky material in the mouth, spitting of saliva, vomiting, laziness and weakness.

Samprapti Flow chart-

Samprapti Ghatak-

- Dosha- Pitta Pradhana tridosha
- Dushya- Rasa, Rakta

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- Agni- Mandagni
- Agni dushti- Rasadhatwagni-mandya
- Srotas- Rasavaha, Raktavaha
- Srotodushti- Sanga, Vimargagaman
- Vyaktasthana- Sarvasharira-Twacha
- Sancharasthana- Sarvasharira
- Rogamarga- Bahya
- Rogaswabhava- Ashukari
- Sadhya- Asadhyata- Kashtasaddhya

Chikitsa –
1] If the disease is associated with *ama* and is located in place of *kapha* (*amasaya* or stomach, or upper body part) then lightening therapy (*Langhana),* emesis should be given.

2] Lepa of materials possessing *sheeta* and *snigdha Guna* should be used. Lepa therapy helps in *Rakta Prasadana*, *Vrana Shodhana, Rakta-Pitta Prashamana and Vrana Ropana. Ghrita* if applied along with various herbs then it can helps in the healing of wound.[5]

3] Rakta mokshana should be done to remove the vitiated blood which the main cause of *visarpa.*

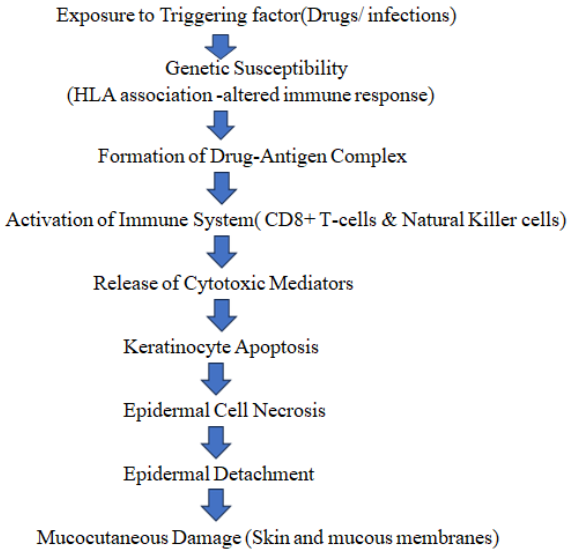
Modern Review on Stevens-Johnson Syndrome –
Introduction–
Stevens-Johnson syndrome and toxic epidermal necrolysis are acute, rare, and potentially fatal skin reactions involving loss of skin and, in some cases, mucosal membranes accompanied by systemic symptoms. Medications are causative in over 80 percent of cases.[3] Stevens-Johnson syndrome and toxic epidermal necrolysis are distinguished based on the extent of the detached skin surface area. Stevens-Johnson Syndrome is initiated by an immune response to a drug metabolite-host tissue antigenic complex. The condition affects 6.3 and 0.5 per 100,000 hospitalized children per year.

Etiological factors –
Stevens-Johnson syndrome/toxic epidermal necrolysis is estimated to affect two to seven per million people each year. Stevens-Johnson syndrome is three times more common than toxic epidermal necrolysis. Stevens-Johnson syndrome/toxic epidermal necrolysis can affect anyone with a genetic predisposition: any age, either sex, and all races, although it is more common in older people and women. It is much more likely to occur in people infected with the human immunodeficiency virus (HIV), with an estimated incidence of 1/1000.[3]

Drugs are the most common cause of Stevens-Johnson syndrome. [1]

- Antibiotics especially Penicillin, cephalosporins, sulfonamides, macrolides, and fluoroquinolones.
- Antiepileptics (Carbamazepine, phenytoin, phenobarbitone,valproic acid.)
- Anti-inflammatory (Nonsteroidal anti-inflammatory drugs, paracetamol and Nimesulide.
- Allopurinol
- Corticosteroids.

Pathogenesis of Stevens-Johnson Syndrome-



Clinical Features-
A latency of 7-10 days is followed by a prodrome of malaise, fever, myalgia, headache, nonproductive cough, stinging eyes, and sore mouth. Thereafter, onset of atypical target lesions or macules with a purpuric nonblanchable centers is seen. The lesions involve face and trunk, evolving quickly into blisters, that slough leaving large areas of skin and mucosae denuded. Painful erythema of palms and soles with periungual dusky erythema is common. [1]

Management –
1]Care of a patient with Stevens-Johnson syndrome/toxic epidermal necrolysis requires supportive care including :[3]

- Cessation of the suspected causative drug(s)
- Hospital admission: preferably to an intensive care and/or burn unit
- Fluid replacement (crystalloid)
- Nutritional assessment: may require nasogastric tube feeding
- Temperature control: warm environment, emergency blanket
- Pain relief (Pain relief should be provided with adequate analgesia.)
- Supplemental oxygen and, in some cases, intubation with mechanical ventilation
- Sterile/aseptic handling

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2]Specific measures are useful only in early acute phase, with signs of progression of cutaneous involvement. They are not productive in late presentation. One can consider using: [1]

- IVIG (0.5-1 g/kg daily for 3-4 consecutive days)
- Ciclosporin (3-4 mg/kg/day for 10 days, and tapered)
- Systemic corticosteroids (prednisolone 0.5-1 mg/kg/day for 10 days or IV methylprednisolone 500 mg on 3 consecutive days.

Correlation of Stevens-Johnson syndrome and *Pittaja Visarpa*:

The pathogenetic events of *Pittaja visarpa* and Stevens-Johnson syndrome are conceptually correlated in the following chart**.** This comparative understanding helps to bridge modern immunopathology with *classical Ayurvedic* concepts and supports an integrative approach to understanding SJS.

Stevens-Johnson syndrome	***Pittaja Visarpa***
Drug hypersensitivity	*Asatmya Aushadha*
Immune reaction	*Dosha Dushya prakopa*
Cytokine storm	*Tikshna, Ushna guna of pitta*
Epidermal necrosis	*Rakta-Twak dushti*
Rapid progression	*Visarpa (Sarpana)*
Systemic toxicity	*Dosha Dushya Sammurchana* ⇩ *Abhyantar Rogmarga* ⇩ *Bahya Rogmarga* ⇩ *Visarpa upadrava*

Clinical Correlation-

The following chart compares the presenting symptoms of Stevens-Johnson Syndrome and *pittaja visarpa*. This comparative approach helps in understanding SJS through the *Ayurvedic* perspective and supports the conceptual correlation between modern dermatological entities and *classical Ayurvedic* disease descriptions.

SR.NO.	SJS	Pittaja Visarpa
1.	Begins with fever	Jwara
2.	Body aches	Angabheda
3.	Headache	Shiroruja
4.	Tiredness,general ill feeling	Chakshusho Akulatvam Aswapna
5.	Pinkish,reddish or purplish rash	Tamra-Krushna-Raktavarni utsedha srava
6.	Burning sensation all over body	Ati Antardaha

DISCUSSION –

We deal with many pre-diagnosed cases of modern medicine throughout Ayurvedic practice, which might be referred to as "*anuktavyadhi."* The *Ayurvedic Siddhanta* and *Parikshana paddhati* for *samprapti-parakadhyayana* and *chikitsa vinishchaya* should be the basis for the clinical evaluation of these *anuktavyadhi*. Although Stevens-Johnson Syndrome is not specifically mentioned or described in the classical Ayurvedic texts, a thorough examination of its etiopathogenesis *(nidāna and samprāpti)* and clinical manifestations (*lakṣaṇas*) reveals significant similarities with the Ayurvedic disease entity *Pittaj Visarpa.* Stevens-Johnson Syndrome shares many similarities with *Visarpa* in terms of its acute onset, rapid spread, and severe involvement of the skin and mucous membranes. Fever, erythema, blister development, burning sensation, and systemic involvement are characteristics of *Visarpa* that point to the predominance of *Pitta dosha* and *Rakta duṣṭi*. Therefore, there is a reasonable correlation between Stevens-Johnson Syndrome and *Visarpa* based on the similarities in pathogenic processes and clinical presentation.

Asatmya ahara and *vihara* is main cause of *visarpa.*The antibiotics, antiepileptics,corticosteroids which cause SJS,can be considered as *asatmya aushadhi.* Stevens-johnson syndrome has high morbidity and mortality rate and in *ayurveda visarpa* is also *Krichrasadhya* or *Asadhya vyadhi.*

CONCLUSION –

Rare diseases pose significant diagnostic and management challenges. In *Ayurveda*, these conditions are not explicitly mentioned (referred as *Anukta Vyadhi)* and are interpreted using foundational principles of *Dosha* imbalance with a systems perspective. Stevens-Johnson syndrome is a rare, emergency disorder of skin and mucous membrane that occurs secondary to use of certain drugs (Allergens). In this review clinical features StevensJohnson syndrome, may be correlated with '*Pittaja Visarpa'.*

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