

AYUSH GUIDELINES FOR MANAGEMENT OF MONKEYPOX DISEASE



सत्यमेव जयते

MINISTRY OF AYUSH

Government of India

1. Global Scenario

According to World Health Organization (WHO), in the present series of outbreaks being reported, this is the first time that chains of transmission are reported in Europe without known epidemiological links to West or Central Africa. Monkeypox has been reported as endemic in several other central and western African countries such as: Cameroon, Central African Republic, Cote d'Ivoire, Democratic Republic of the Congo, Gabon, Liberia, Nigeria, Republic of the Congo, and Sierra Leone. This has been also reported in certain non-endemic countries e.g. USA, UK, Belgium, France, Germany, Italy, Netherlands, Portugal, Spain, Sweden, Australia, Canada, Austria, Canary Islands, Israel and Switzerland.

2. Epidemiology

2.1 Agent

Monkeypox virus (MPXV) is an enveloped double-stranded DNA virus that belongs to the Orthopoxvirus genus of the Poxviridae family. There are two distinct genetic clades of the monkeypox virus – the Central African (Congo Basin) clade and the West African clade. The Congo Basin clade has historically caused more severe disease and was thought to be more transmissible. The geographical division between the two clades has so far been in Cameroon - the only country where both virus clades have been found.

2.2 Host

Natural reservoir is yet unknown. However, certain rodents (including rope squirrels, tree squirrels, Gambian pouched rats, dormice) and non-human primates are known to be naturally susceptible to monkeypox virus.

2.3 Incubation period

The incubation period (interval from infection to onset of symptoms) of monkeypox is usually from 6 to 13 days but can range from 5 to 21 days.

2.4 Period of communicability

1-2 days before the rash to until all the scabs fall off/gets subsided.

2.5 Mode of transmission:

Human-to-human transmission is known to occur primarily through large respiratory droplets generally requiring a prolonged close contact. It can also be transmitted through direct contact with body fluids or lesion material, and indirect contact with lesion material, such as through contaminated clothing or linens of an infected person.

Animal-to-human transmission: may occur by bite or scratch of infected animals like small mammals including rodents (rats, squirrels) and non-human primates (monkeys, apes) or through bush meat preparation.

3. Case definition

3.1 Suspected case:

A person of any age having history of travel to affected countries within last 21 days presenting with an unexplained acute rash AND one or more of the following signs or symptoms

- Swollen lymph nodes
- Fever
- Headache
- Body aches
- profound weakness

3.2 Probable case:

A person meeting the case definition for a suspected case, clinically compatible illness and has an epidemiological link (face-to-face exposure, including health care workers without appropriate PPE; direct physical contact with skin or skin lesions, including sexual contact; or contact with contaminated materials such as clothing, bedding or utensils is suggestive of a strong epidemiological link).

3.3 Confirmed case:

A case which is laboratory confirmed for monkeypox virus (by detection of unique sequences of viral DNA either by polymerase chain reaction (PCR) and/or sequencing).

4. Clinical Features

Monkeypox is usually a self-limited disease with the symptoms lasting from 2 to 4 weeks. Severe cases occur more commonly among children and are related to the extent of virus exposure, patient health status and nature of complications. The extent to which asymptomatic infection occurs is unknown. The case fatality ratio of monkeypox has historically ranged from 0 to 11% in the general population and has been higher among young children. In recent times, the case fatality ratio has been around 3-6%.

4.1 Common symptoms and signs

- **Prodrome (0-5 days)**

a. Fever

b. Lymphadenopathy

- Typically occurs with fever onset
- Periauricular, axillary, cervical or inguinal

- Unilateral or bilateral
- c. Headache, muscle aches, exhaustion
- d. Chills and/or sweats
- e. Sore throat and cough

Skin involvement (rash)

- a. Usually begins within 1-3 days of fever onset, lasting for around 2-4 weeks
- b. Deep-seated, well-circumscribed and often develop umbilication
- c. Lesions are often described as painful until the healing phase when they become itchy (in the crust stage)
- d. Stages of rash (slow evolution)
 - Enanthem- first lesions on tongue and mouth
 - Macules starting from face spreading to arms, legs, palms, and soles (centrifugal distribution), within 24 hours
 - The rash goes through a macular, papular, vesicular and pustular phase. Classic lesion is vesicopustular
 - Involvement by area: face (98%), palms and soles (95%), oral mucous membranes (70%), genitalia (28%), conjunctiva (20%). Generally skin rashes are more apparent on the limbs and face than on the trunk. Notably the genitalia can be involved and can be a diagnostic dilemma in STD population
 - By 3rd day lesions progress to papules
 - By 4th to 5th day lesions become vesicles (raised and fluid filled).
 - By 6th to 7th day lesions become pustular, sharply raised, filled with opaque fluid, firm and deep seated.
 - May umbilicate or become confluent
 - By the end of 2nd week, they dry up and crust
 - Scabs remain for a week before falling off
 - The lesion heals with hyperpigmented atrophic scars, hypopigmented atrophic scars, patchy alopecia, hypertrophic skin scarring and contracture/deformity of facial muscles following healing of ulcerated facial lesions
 - A notable predilection for palm and soles is characteristic of monkey pox
- e. The skin manifestation depends on vaccination status, age, nutritional status, associated HIV status. Monkeypox chiefly occurs in communities where there is often a high background prevalence of malnutrition, parasitic infections, and other significant health-compromising conditions, any of which could impact the prognosis of a patient with MPX.
- f. The total lesion burden at the apex of rash can be quite high (>500 lesions) or relatively slight (<25).

4.2 Differential Diagnosis

Varicella (Chicken pox), disseminated herpes zoster, disseminated herpes simplex, measles, chancroid, secondary syphilis, hand foot mouth disease, infectious mononucleosis, molluscum contagiosum.

4.3 Referral to Higher Facility

The patient should be closely monitored for the appearance of any of the following symptoms

- Pain in eye or blurring of vision
- Shortness of breath, chest pain, difficulty in breathing
- Altered consciousness, seizure
- Decrease in urine output
- Poor oral intake
- Lethargy

In case any of the above symptoms appear, the patient should be immediately referred to nearby higher healthcare facility.

5. Management

5.1 General measures

The primary prevention strategy for monkeypox involves raising awareness about risk factors and educating people on how to reduce their exposure to the virus. As close contact with infected persons is the most significant risk factor for monkeypox virus infection, health care workers and family members of the suspected/ case of monkeypox should take necessary precautions to stay protected.

Measures that can be taken to prevent infection with monkeypox virus includes:

- 1) Avoid contact with any materials, such as bedding, that has been in contact with a sick person.
- 2) Avoid direct physical contact with skin or skin lesions including sexual contact with suspected/infected patient.
- 3) Refrain from any skin contact with small animals like squirrels, monkeys which are carriers.
- 4) Patient should be managed in isolation, precautions should be taken to minimize exposure to surrounding persons. A surgical mask may be used to cover patients nose and mouth. Practice good hand hygiene after contact with infected animals or humans
- 5) Use appropriate personal protective equipment (PPE) when caring for patients.
- 6) Adequate sleep (7-8 hours) should be taken and day time sleep preferably be avoided.
- 7) Over exertion should be avoided.
- 8) Take adequate rest.

5.2 General Diet and life style recommendations:

1. Drink warm water frequently and stay hydrated.
2. Lentil soup particularly of Green gram soup/ Khichdi may be preferred.
3. Take warm freshly prepared and easily digestible food.
4. Consumption of excessive hot, spicy and oily foods is strictly prohibited.
5. Smoking, Consumption of liquor and carbonated beverages should be avoided.
6. Gargling - Triphala chooranam + Crystal salt + Turmeric powder mix with warm water.
7. Buttermilk water, Cucumber, Plantain fruit, Gruel, Palm sugar candy may be added in diet.

5.3 Specific Measures / Symptom Management

5.3.1 Ayurveda system of medicine

Clinical severity	Medicines	Dose & timings
Prophylactic	Shadanga Paniya	To be consumed minimum 4-5 times a day
	Haridra Khanda	10 gm with honey before breakfast
	Kaishor Guggulu	500 mg TID
	Samshamani Vati	500 mg BD
	Aparajita Dhoopa	Fumigation for Disinfection

Clinical severity	Symptoms	Treatment	Dose and duration
Prodromal stage	<ol style="list-style-type: none"> 1. Fever 2. Enlarged lymph nodes 3. Headache, 4. Muscle aches, exhaustion 5. Rashes exhibiting macular stage starting after the onset of fever i.e after 1-2 days 	1) Sudarshan Ghana vati/ Samshamani vati	2 tablets of 250 mg BD
		2) Sariva Hima Coarse powder of Sariva (Hemidesmus indicus) is taken and soaked overnight in water (6 times that of the powder)	To be consumed 4-5 times a day

		3) Amrutottar kashaym/Vasa Guduchyadi	50 ml BD
Skin rash	Maculopapular rash progressing to pustular stage	Haridra khanda	10 gm with before breakfast
		Guluchyadi Kashaya/patol katurohinyadi	50 ml BD
		Kaishor guggul	Upto maximum of 1 gm TID
		Laghu Sutashekhara Rasa	250 mg BD
		Locally: panchavalkal kwatha for dhavana	As per requirement

Supportive management of Monkeypox:

Component of management	Clinical symptoms	Management strategy (Local application as per required quantity)
Protection of compromised skin and mucous membranes	Itching, pruritus	Nimba patra kwatha for vrana dhavan
	Genital ulcers	Panchavalkal kwatha for vrana dhavana Jatyadi oil local application
	Oral ulcer	Triphala gandusha mouthwash Arimedadi oil Yashtimadhu oil

5.3.2 Homeopathy

Below mentioned Homoeopathy medicines may be selected based on the presenting signs and symptoms of each patient.

- **Apis mellifica**
- **Arsenicum album**
- **Antimonium tartaricum**
- **Belladonna**
- **Bryonia**
- **Carbo vegetabilis**
- **Thuja occidentalis**
- **Mercurius**
- **Rhus tox**
- **Sulphur**

5.3.3 Siddha system of Medicine

Stage/ condition	Signs and Symptoms	Medicine		Dosage
The prodrome phase of Monkeypox	-	Tab.Amukkara chooranam	1 to 2 tablets twice a day with warm water.	
		Seenthil chooranam	2 grams twice a day with warm water.	
		Adathodai kudineer chooranam	5ml to 60ml	
Symptomatic phase of monkey pox	Fever, headache	Nilavembu kudineer chooranam / kabasura kudineer chooranam /	5ml to 60ml	
	Cough	Adathodai manapagu	5-10ml twice a day	
	Sore throat	Athimathura chooranam	2-3 grams twice a day with honey.	
	Low back ache/ muscle ache	Thetran ilagam	5 grams twice a day.	
	Rehydration therapy and nutritional support	Kothumalli kudineer	30-60ml twice a day	
	Skin rash (crops, macules, papules, vesicular and pustular lesion)	Parangipattai chooranam	2grams twice a day with warm water.	
			External Medicine	
	Oral ulcer	Kungiliya vennai	As required	
	Skin rash (macules, crops, papules, vesicular and pustular lesion)	Kungiliya vennai	As required	

	Genital ulcer	Thiripala chooranam	Sitz bath
	To regain immunity and vitality	Nellikai legium	5 – 10 g twice a day

5.3.3 Unani System of Medicines

Immunity Promoting Measures

- Take Khamira Marwareed 5 gm OD or Tiryage Arba 3-5 gm (Diabetics may avoid).

Supportive Management

Signs & Symptoms	Treatment	Dosage
Fever, Headache and Bodyache	<i>Habb-i-Bukhar</i>	250-500 mg
	<i>Habb-i-Mubarak</i>	1-2 pills (1gm each) BD
Sore throat	<i>Sharbat-i-Toot Siyāh</i>	20-40 ml in divided doses
	<i>Sharbat-i-Banafsha</i>	25-50 ml along with lukewarm water in divided doses
Weakness	<i>Khamīra'-i-Marwārīd</i>	3 gm in morning
	<i>Safoof Asgand</i>	5 gm OD
Skin Rashes	<i>Sharbat-i-'Unnāb</i>	25-50 ml mixed with <i>Mā'-al-Sha'īr</i> in divided doses
	<i>Araq-i-Shāhtra</i>	50-120 ml in divided doses
	<i>Marham Hīna</i>	Local application
	<i>Marham Kāfūrī</i>	Local application

5.3.4 Yoga Practices

Asana

- Lessening breathing exercises – 5 minutes
- Surya Namaskar – 2 rounds

Pranayama

- Bhastrika 3 rounds

- Nadishuddi /anulom vilom 3 rounds
- Shitali 3 rounds

Disclaimer: These are the guidelines for symptomatic management of monkey pox through Ayush system of medicines. In addition to these medicines; general and dietary measures along with Yoga are to be followed. Physicians have to decide useful formulations from the above or substitutable classical medicines based upon their clinical judgement, suitability, availability and regional preferences. Dose may be adjusted based upon the patient's age, weight, and condition of the disease.