

Letter to Editor

HAEMATOLOGICAL PROFILE OF PATIENTS INFECTED WITH MONKEY POX VIRUS

To the Editor,

Dear Sir,

The outbreak of Monkey Pox, was confirmed in May 2022. The first case was detected in London, United Kingdom in a patient with travel history from Nigeria.¹ Few cases of monkey pox were reported in Delhi, India. Lok Nayak Hospital, Delhi was made the designated hospital to admit patients infected with the monkeypox virus. The blood samples of first twelve cases reported in Delhi admitted to Lok Nayak Hospital were analysed. Of these twelve, eleven patients were from Africa.

Monkey pox is a zoonotic disease caused by monkeypox virus. It belongs to the genus Orthopoxvirus in the Poxviridae family. It occurs in the tropical rain forests of central Africa and west Africa. It may be exported to other regions. The disease is transmitted via close intimate contact or through fluids in dermal lesions.¹

Patients admitted at Lok Nayak Hospital, Delhi presented with intermittent mild to moderate grade fever, myalgia, lesions on upper and lower limbs, trunk, groin and genitals. Lymphadenopathy was noted in four cases.²

The patients were admitted in an isolation ward. Samples were sent to National Institute of Virology, Pune for diagnosis of Monkey Pox virus by RT-PCR. The haematology samples were received in our laboratory. The first sample for hemogram was sent on the first day of admission. The haematology parameters of the patients were obtained using automated haematology analyser Mindray BC-6200. Peripheral blood smears were prepared taking all necessary precautions.

Of the twelve patients infected with monkey pox, three patients showed an increase in percentage of lymphocytes. The lymphocyte count was not raised in the other nine patients. No other abnormal counts were detected in other patients. Few transformed lymphocytes (TL) were noted in all patients. Activated monocytes (AM) with cytoplasmic vacuolation were noted in four cases. Large granular lymphocytes (LGL) were noted in two cases. Two patients showing lymphocytosis were found to need a longer period of hospital stay as the patients were clinically sicker than others. The absolute lymphocyte counts gradually reduced and the patients were discharged after being tested negative by RT-PCR eventually.

Transformed lymphocytes may be seen in both viral and bacterial infections. Large granular lymphocytes are lymphoid cells of T-cell or natural killer cell phenotype. Their expansion may be seen in infectious and neoplastic conditions. They help in immunosurveillance. Vacuolations of monocytes are associated with infections and toxic conditions.³

The patients admitted with monkey pox showed haematological findings which were like other viral diseases. The patients admitted at Lok Nayak Hospital, Delhi were found to be infected

Comment [MQ1]: Add clinical symptoms and Diagnostic parameters of Monkey pox virus. This paragraph should be discussed first and the information regarding its outbreak and blood samples should be discussed later.

Comment [MQ2]: Add blood films microscopic images supporting your findings

Comment [MQ3]:

with the west African lineage which is less severe than the central African lineage. All the patients were clinically stable with mild symptoms and good recovery.²

Periodic capacity building sessions were held at Lok Nayak Hospital for health care personnel regarding management of suspected and confirmed cases of Monkeypox. Though monkey pox is a self-limiting disease, few cases have progressed to severe disease around the world. The case fatality rate of Monkey pox infection has been reported to be around 3-6% by the WHO.⁴ Analysis of clinical symptoms along with haematological parameters is important in assessing severity of infection for proper management of confirmed cases.

Table 1: White blood cell parameters in monkey pox infected patients

PATIENT NO.	TLC	POLYMORPHS (%)	LYMPHOCYTES (%)	MONOCYTES (%)	EOSINOPHILS (%)	TL	AM	LGL
1.	11700	57.7	37.1	1.2	3.8	+	-	-
2.	3340	42.6	50.5	5.5	1.5	+	+	-
3.	12300	57.9	35.8	4.5	1	+	-	-
	8070	28.7	64.7	2.1	3.9	+	-	-
	6610	39	52	3	6	+	-	-
4.	10,300	58	26	11	5	+	-	-
	8900	89	6	2	3	+	-	-
5.	7500	48	33	10	6	+	-	-
6.	7700	56	39	4	1	+	-	-
7.	11,100	42.6	46.5	7.9	3	+	+	-
8.	9500	57.6	36.5	3.9	2	+	+	-
9.	8660	43	52	2	3	+	-	-
10.	4640	56	41	2	1	+	-	+
11.	7550	53	40	4	3	+	+	+
12.	10700	55.5	33.1	10	1.4	+	-	-

Comment [MQ4]: Discuss and conclude this table and it's findings in text section.

Comment [MQ5]:

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1. Monkeypox outbreak 2022- Global. World Health Organization. <https://www.who.int/emergencies/situations/monkeypox-oubreak-2022>. Published August 31, 2022. Accessed October 5, 2022.
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3. Bain B, Bates I, Laffan M. Dacie and Lewis Practical Haematology. 12th ed. London: Elsevier; 2017.
4. Singh T, Baskaran P, Raghav P, Naveen KH. Monkeypox: Current Situation in India: An Old Virus, A New Menace? Indian J Community Med. 2022;47:628-30.