

## **Monkeypox and laboratory medicine: more data are urgently needed**

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Dear Editor,

Currently, commencing from the end of April-early May 2022, an outbreak of monkeypox, a disease clinically similar to smallpox but generally milder, caused by a poxvirus, is ongoing, with more than 2,100 cases being reported as of June 16, 2022 – 2,066 of which have been confirmed, 100 are suspected and being investigated, totaling 2,166 cases. Slightly less than 60 countries and territories are affected, in the Americas, Europe, Oceania, and the Middle East and North Africa (MENA) area.

Laboratory medicine is a fundamental branch and specialization of internal medicine, that deals with the use and the interpretation of laboratory investigations [1]. In the arena of tropical and infectious disease medicine, the principles, as well as the practices of laboratory medicine, represent a source of knowledge of paramount importance for practitioners and clinicians, along with researchers. Laboratory medicine is critical for the thorough characterization of tropical diseases as well as other infections. Here, in the present contribution, we will briefly overview the state-of-art of laboratory medicine applied to the ongoing 2022 monkeypox epidemic and we will discuss the currently available evidence and the gaps in knowledge.

Since monkeypox is a rare disease, having comprehensive and accurate data on the clinical and laboratory presentation of monkeypox is essential for optimal disease management and monitoring [2]. In particular, the identification of biomarkers could help predict the course of the infection, shed light on its underlying cellular and molecular mechanisms, and devise new pharmacological strategies.

To the best of our knowledge, only a few studies reported laboratory medicine data in monkeypox patients. For instance, in France, Davido et al. [3] described a 37-year-old man having sex with men (MSM) with a past history of treated vitiligo. Clinical chemistry tests showed an elevated C-reactive protein (CRP) (74 mg/L), together with lymphopenia (960/mm<sup>3</sup>), whereas no other abnormalities could be described.

In Australia, Hammerschlag et al. [4] reported a case of an HIV-positive individual in his thirties, with CRP values mildly elevated at 12 mg/L, with the reference range spanning from 0 to 5 mg/L.

Joob and Wiwanitkit [2] have, recently, summarized the peak alanine transaminase (ALT) levels in a sample of 21 monkeypox cases. The authors found that peak ALT levels ranged from 11 to 550 U/L, whereas the normal threshold was 35 U/L. Hyperalaninetransaminasemia was observed in 12 of the 21 patients, thus affecting 57.1% of the sample (with a 95 percent confidence interval ranging from 31.0% to 97.2%). The authors concluded that hyperalaninetransaminasemia can be commonly reported among monkeypox patients. However, these data refer to previous monkeypox outbreaks, and not to the currently ongoing one, which has some remarkable features that make it atypical, including the shift in average age and sex/gender group most affected, signs/symptoms of clinical

presentation, epidemiological risk factors, and transmission route [5]. As such, laboratory medicine is a precious knowledge source in this early phase of the epidemic, to have a better overview of the pathogenesis and transmission of the infectious disease. Therefore, more data should be urgently reported and provided.

## REFERENCES

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