Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.
29% positive and 34% negative for COVID-19; the remaining 37% included those recommended to isolate without testing and those for whom test results were unavailable.

**Conclusion:** CBS has supported early detection and contact tracing of COVID-19 in Indonesia. The community case definition used to identify potential alerts was sensitive and easily understood by non-health workers. The system proved readily scalable and adaptable, enabling a shift from passive to active surveillance and making it feasible to be implemented anywhere in the community.

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**Topic 05: COVID-19 Diagnostics and Therapeutics**

**OP05.01 (564)**

**Colorimetric reverse transcriptional loop-mediated isothermal amplification for rapid detection of SARS-CoV-2**

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**Purpose:** With the increasing incidence of a novel coronavirus SARS-CoV-2 causing COVID-19 cases, accurate and early detection infection is need of the hour for effective prevention and management. Therefore, the aim of this study was to develop a colorimetric reverse transcriptional loop-mediated isothermal amplification for rapid detection of SARS-CoV-2.

**Methods & Materials:** Inactivated SARS-CoV-2 virus samples were procured from the National Institute of Virology, Pune, India. Various genes were targeted for primer design, such as nucleocapsid, spike, RNA dependent RNA polymerase, and envelope genes region of SARS-CoV-2. *In-vitro* synthesised viral RNA was used for the standardisation of the RT-LAMP. RT-LAMP products were visualised by the naked eye using hydroxy naphthol blue dye. The sensitivity of RT-LAMP assay was performed by diluting *in-vitro* synthesised viral RNA at a different concentration such as 5 ng/μl, 25 ng/μl, 50 ng/μl, 200 ng/μl. Additionally, the RNA copy number was estimated and tested with RT-LAMP. *In-silico* analysis was carried to calculating the percentage of mismatch using various viral sequences, including SARS-CoV-2, other coronaviruses, and other related RNA virus sequences available at GenBank.

**Results:** RT-LAMP assay was standardised using *in-vitro* synthesised viral RNA. Temperature and time standardisation revealed, all the targets i.e., E, S, N, and RdRp gene regions had an optimum temperature of 63°C and time, 60 min. The sensitivity of all the target genes were ten copies of viral RNA. RT-LAMP amplified products were visualised by the naked eye using hydroxy naphthol blue dye and verified by agarose gel electrophoresis. All the primers used for the RT-LAMP assay showed a zero percent mismatch with SARS-CoV-2 sequences available at GenBank.

**Conclusion:** Colorimetric reverse transcriptional loop-mediated isothermal amplification assay developed in this study could provide a visual and faster alternative to the RT-qPCR assays.

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**OP05.02 (711)**

**COVID-19 in People Living with HIV**

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**Purpose:** The current COVID-19 pandemic affects all strata of the population. Particular interest is the study of the course of this pathology in people with comorbidity.

The purpose of our research is to study the features of the course of a COVID-19 people living with HIV (PLHIV).

**Methods & Materials:** We conducted a retrospective analysis of the epidemiological, clinical and laboratory data of 121 patients with HIV infection treated for COVID-19 in 2020. Among PLHIVS, 87.6% were treated with antiretroviral therapy for HIV infection an average of 5.8 years.

**Results:** It was found that 45.5% were women and 54.5% were men. The greatest age was 41 years old (IQR: 20-78 years). The greatest number of cases was observed among both men and women in the age category of 30-49 years (74.2% and 72.7%, respectively). In the studied group, in 63.4%, in addition to HIV infection, patients suffered from other concomitant diseases, the most frequent of which were chronic lung diseases (22.3%), hypertension (18.2%), metabolic disorders (13.2%). In all cases, the COVID-19 disease occurred with a clinical manifestation. The most common symptoms were fever (76.0%), cough (63.6%) and sore throat (56.2%), loss of taste and smell was detected in 49.6% of cases. In 48.8%, COVID-19 in PLHIV was mild. In 88.1%, the duration of the disease did not exceed 14 days. Moderate forms were noted in 40.5% of cases. 10.7% of cases have severe form of COVID-19. The fatal outcomes were recorded in 8 patients, while in the group of patients receiving antiretroviral therapy, the mortality rate was 3.8%, and in the group without antiretroviral therapy - 26.7%.

**Conclusion:** We estimated that the proportion of deaths in patients with HIV infection is higher than in the general population (2.2%). PLHIV are a vulnerable group in relation to the risk of death from COVID-19.

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**OP05.03 (55)**

**Assessment of High-Titer Convalescent Plasma as an Adjunctive Therapy in the Reduction of Mortality Rate and Viral Load in Patients with Severe COVID-19: A Meta-Analysis**

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**Purpose:** COVID-19 has emerged as the "first pandemic of the 21st Century" and continues to pose challenges to global health. Currently, the most common symptomatic management of COVID-19 patients involves isolation and oxygen therapy. However, present protocols are still deemed insufficient; hence, other treatment options are being considered and tested. This includes convalescent plasma therapy (CPT), which involves a strategy of passive immunization.

With this, the primary objective of this systematic review/meta-analysis is to collate, systematically compare, and synthesize available clinical trials involving convalescent plasma (CP), more specifically, high-tier CP, as adjunctive therapy in the treatment of patients with severe COVID-19.

**Methods & Materials:** This was accomplished by comparing the effect of high-tier CP with standard treatment alone, in terms of mortality rate and viral clearance, by reviewing selected studies based on an inclusion-exclusion criteria and synthesizing selected studies through qualitative analysis and meta-analysis.

**Results:** A total of five studies were included, which consist of: three randomized clinical trials (RCTs); one retrospective trial; and one single arm trial. Four studies were subjected to meta-analysis for mortality rate. For instance, it was determined that the overall incidence mortality rate of patients who received high-tier CP is 11.59% of the experimental group, while the incidence mortality rate of patients who only received standard care is 20.25% of the control group (Risk Ratio (RR), 0.71; 95% confidence interval (CI), 0.46-1.09; P-value = 0.46). Moreover, three of the included trials were subjected to qualitative analysis, all of which depicted undetectable viral levels in some patients as early as 3 days, while others exhibited a steady decline.

**Conclusion:** Treatment of COVID-19 with the use of high-titer convalescent plasma as an adjunctive therapy, compared with standard care or treatment, was not significantly associated with reduction of all-cause mortality. High-Tier CPT also shows potential in increasing COVID-19 viral clearance, which indicates an antiviral effect; however, controlled clinical trials with comparator or placebo groups are needed to further support these findings.

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**OP05.04 (367)**
**Investigation of SARS-CoV-2 RNAemia in the convalescent plasma of COVID-19 patients**

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**Purpose:** The novel severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is responsible for the ongoing global COVID-19 disease pandemic. Convalescent plasma therapy (CPT) is one of the promising therapies being tried for COVID-19 patients. However, the presence or disappearance of SARS-CoV-2 RNA (RNAemia) in convalescent plasma is unclear and the prognostic implication of viral RNA detection in these samples is not fully understood. Hence, we aimed to investigate SARS-CoV-2 RNAemia in the convalescent plasma of COVID-19 patients.

**Methods & Materials:** Convalescent plasma samples from donors with a previous laboratory-confirmed SARS-CoV-2 infection were included in the study. Samples were screened for the presence of Anti-SARS CoV-2 IgG antibodies using a commercially available enzyme-linked immunosorbent assay targeting the whole-cell antigen of SARS-CoV-2. Then plasma samples were pooled by the mixing of five samples. RNA extraction and real-time RT-PCR for SARS-CoV-2 specific gene targets was performed for pooled plasma samples.

**Results:** A total of 250 convalescent plasma samples of COVID-19 patients with different disease severity were included in the study; of these, 149 (59.6%) were found to have anti-SARS-CoV-2 antibodies using serological tests. SARS-CoV-2 RNA was not detected in any of the convalescent plasma samples.

**Conclusion:** SARS-CoV-2 RNAemia was not found in individuals with a previous laboratory-confirmed SARS-CoV-2 infection at least 28 days after the resolution of their symptoms. All RT-PCR positive COVID-19 patients subsequently may not develop antibodies. Our study showed that screening for neutralizing antibody titres is more important rather than SARS-CoV-2 RNA detection in convalescent plasma samples for therapeutic use.

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**OP05.05 (448)**
**Emerging COVID-associated mucor-aspergillusosis – A Need of Separate Definition**

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**Purpose:** During COVID pandemic, several cases of isolated COVID-associated mucormycosis and COVID-associated pulmonary aspergillusosis have been reported. There is no data regarding both infections in same patients. Herein, we present series of ten consecutive cases with dual invasive molds in patients infected with SARS-CoV-2.

**Methods & Materials:** Among patients hospitalized with diagnosis of COVID in May 2021 at a tertiary care center in North India, ten microbiologically confirmed dual/mixed COVID-associated mucor-aspergillusosis (CAMA) were analysed. We hypothesised case definition for Covid-associated mucormycosis and aspergillusosis infection derived from EORTC/MSG, as possible, probable, and proven CAMA.

**Results:** Six men and four women had a mean age of 49.2 ± 8.8 years. All patients were diabetic with history of COVID pneumonia. Patients presented with headache, fever, altered sensorium, decreased vision, nasal obstruction, periorbital swelling, nasal stuffiness, nasal discharge. *Rhizopus arrhizus* was isolated in all, *Aspergillus flavus* in seven and *Aspergillus fumigatus* in three patients. Patient 2,5,6,8,9 were histopathologically proven dual infections with patient 3 & 7 having only angioinvasion. Patients received amphotericin B and all except 3 were managed by surgical debridement, the remaining 3 succumbed.