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CRRT helps in curbing cytokine storm in Covid-19 patients: Research

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Cytokine Storm appears to be common in severe cases of COVID-19



Cytokine Storm appears to be common in severe cases of COVID-19. This is an umbrella term wherein a massive release of cytokines; i.e. immune proteins that may lead to multi-organ involvement. This uncontrolled reaction can occur in a variety of conditions, including infections, organ damage and autoimmune disorders. Cytokine Storm can be life-threatening and may require urgent intervention. Early studies suggest that up to 67% of hospitalized COVID-19 patients may present with additional organ dysfunction syndromes, other than lungs that may be induced by a high level of circulating cytokines.

Dr. Rushi Despande, Nephrologist HN Reliance & Jaslok, Mumbai said, “According to Chinese researchers with much experience of managing COVID-19 patients, Continuous Renal Replacement Therapy (CRRT) is not just renal support, but also helps in curbing the cytokine storm and multi-organ support in critically ill patients. In situations where patients may not be able to sustain rapid changes in body fluid balance and metabolic fluctuations and in situations where other extracorporeal therapies are required like invasive ventilator support, continuous RRT can be used as an integrated system and are preferred over parallel systems.”

Dr. M M Bahadur, Nephrologist, Jaslok, Mumbai said, “As per the recommendation of American Society of Nephrology and in the COVID-19 pandemic scenario, the CRRT may be one of the preferred modalities, especially for those who have hemodynamic instability. CRRT is a blood purification therapy applied for 24 hours a day. At present, among the other therapies being used, CRRT is beneficial to maintain volume balance, hemodynamic stability and to improve the clearance efficiency of middle-sized molecules such as cytokines especially when used with adsorptive filters which can help with improved clearance of cytokines from circulation.”

He further added, “One such adsorptive filter available in India is Oxiris, which amidst COVID-19 pandemic crisis has also received emergency use authorization from the US Food and Drug Administration (FDA) for COVID-19 treatment, moreover this filter set can be used to perform multiple blood purification therapies simultaneously, including cytokine removal or/and CRRT.”

In addition to the above-mentioned benefits, Chinese researchers recommend CRRT treatment should also be used in other non-renal indications, especially to control cytokine storm, appropriate early intervention should be made when ARDS, right heart failure and capacity overload occurs at the initial stage, CRRT should be activated to implement three-level management capacity to better support cardiopulmonary function. Overall, along with ventilators the hospitals should also plan and manage adequate supply for dialysis equipment and associated supplies not only for outpatient use but also critically ill patients in intensive care units.