

Covid-19 medical sequelae

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The medical sequelae, including psychic ones, of Covid-19 are non-or poorly reversible post-acute phase organic damages, or poorly qualified disorders occurring after healing.

The lung is often affected and interstitial pulmonary fibrosis can persist after an acute phase that appeared to be mild. It is due to an increased cytokine production, an airway hyperpressure associated with ventilation, or an anoxia due to an imbalance between oxygen needs and supply. Fibrosis causes a decline in the respiratory function, an extension of CT scan lesions and an increased susceptibility to respiratory infections. A low degree of fibrosis may increase mortality in the elderly.

Inflammatory myocarditis, as evidenced by elevated troponin and BNP (B-type natriuretic peptide), often found in intensive care patients, may lead to a left ventricular failure. Myocardial infarction may occur, linked to a plaque rupture favored by infection or to a prolonged anoxia. A right ventricular failure secondary to pulmonary arterial hypertension as a consequence of fibrosis or an acute pulmonary embolism, and rhythm disorders (extrasystoles, ventricular tachyarrhythmia, atrial fibrillation) are sometimes observed.

Frequent in the acute phase, proteinuria, microscopic hematuria and moderate elevation of creatinine reflect renal damage. To evaluate tubular lesions, KIM-1 (kidney injury molecule-1) and NGAL (neutrophil gelatinase-associated lipocalin) should be used. Reversible acute renal failures, related to fluid and electrolyte disturbances, have been observed. Tubular damage causes necrosis, which may lead to end-stage chronic renal failure, in a silent course that requires a prolonged surveillance.

Brain damage may be related to the virus or may result from anoxia in ventilated patients, strokes or acute disseminated autoimmune encephalomyelitis which, if it affects the peripheral nerves and the diaphragm, may worsen respiratory disorders. Brainstem damage has the same effect.

Sarcopenia is almost constant in patients who are immobilized in intensive care. It requires prolonged rehabilitation.

Psychic sequelae affect patients coming out of resuscitation and then of convalescence. They require a psychological support.

This is also the case for nursing staff subjected to long working hours and increased responsibilities leading to fatigue, anxiety and lack of sleep; disabled children and young adults who have left their host institutions; children deprived of school; and students whose studies have been interrupted.

After an often short acute phase, poorly qualified disorders may be observed. Testing for the virus is negative. The presence of specific Ig G confirms the previous infection. Episodic or prolonged, symptoms include general malaise, muscle pain, arthralgia, fatigue at the slightest effort, memory loss, and sometimes acute tachycardia. The clinical examination is negative, except often for weight loss. It is difficult to distinguish between the consequences of Covid-19 from other causes. Despite paracetamol, psychological support and renutrition, treatment is difficult.

For these medical sequelae, the National Academy of Medicine recommends:

- Resumption of physical activity, especially walking, as soon as possible.
- Attention to the most affected functions (heart, brain, muscles, lung);
- Monitoring these after-effects through a cohort study;
- Recruitment of medical personnel to reduce the risk of burn-out and the increase of their remuneration;
- In the event of reconfinement, assistance to parents of disabled children.