Urinalysis supports the follow-up phase of the COVID-19 patient pathway

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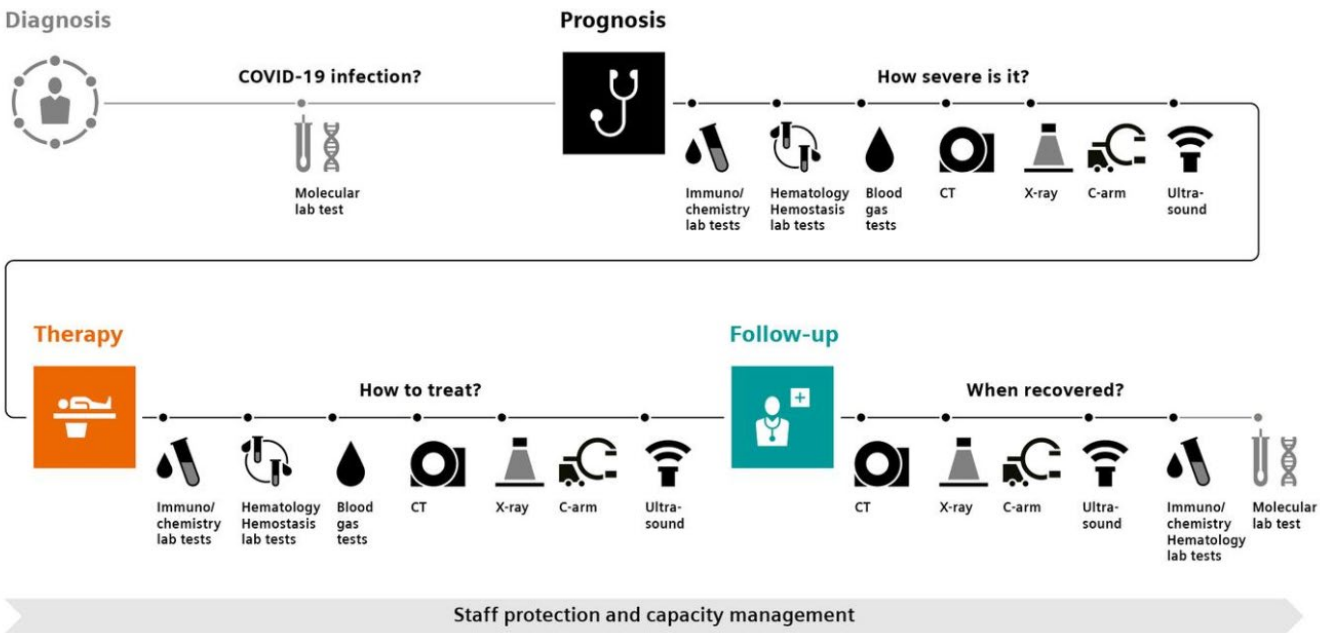
As the coronavirus (SARS-CoV-2) pandemic continues to spread, Siemens Healthineers is working hard to provide the best possible support to healthcare providers at each stage of COVID-19 patient care: diagnosis, prognosis, therapy and follow-up.

Initial studies suggest that continuous monitoring of kidney function of infected patients recovering from the coronavirus could be beneficial. Point-of-care urinalysis testing is an established and simple way to assess renal health.



SIEMENS Healthineers

The role of urinalysis in assessing kidney health in COVID-19 patients

Coronaviruses and renal failure

Previous studies indicate that coronaviruses (SARS, MERS, CoV-2) replicate in kidney tissues, causing damage and triggering renal failure.[1,2,3,4]

Initial studies also show COVID-19 disease causes other complications (such as Rhabdomyolysis), eventually causing renal failure and kidney damage.[5]

Urinalysis reagent strips screen for sources of acute kidney injury[7]:

- Protein (proteinuria)
- Blood (hematuria, myoglobinuria)
- Leukocyte esterase (pyuria)
- Nitrite (bacteriuria)
- Glucose level

The AKI guideline by the National Institute for Health and Care Excellence in the UK recommends performing urine dipstick testing for blood, protein, leukocytes, nitrites, and glucose in all patients as soon as AKI is suspected.[8]

Siemens Healthineers urinalysis portfolio

Urinalysis testing enables clinicians to monitor patients' renal function, which can be impacted by COVID-19. Siemens Healthineers established urinalysis portfolio offers customized solutions for all care settings, including urinalysis reagent strips such as Multistix® 10 SG and Multistix® 8 SG. The presence of protein would prompt additional testing, as various types of proteins can indicate different disease states or conditions.

Similarly, CLINITEK® Microalbumin 2 urinalysis reagent strips screen for albumin and calculate an albumin-to-creatinine ratio (ACR). ACR normalizes urine concentration to more accurately detect adverse traces of albumin in urine, which can indicate potential kidney damage.

One study showed that of recovering COVID-19 infected patients[6]:

9% developed **acute kidney injury (AKI)**

34% developed **albuminuria** on the first day of admission

63% developed **proteinuria** during their stay in hospital

Urinalysis is the most important noninvasive test in the initial workup of acute kidney injury. Findings of urinalysis guide the differential diagnosis and direct further workup.[9]

Acute Kidney Injury: A Guide to Diagnosis and Management

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