

Atypical Hemolytic Uremic Syndrome and Super-infection after COVID-19

Majid Malaki

Sir,

Atypical haemolytic uremic syndrome (HUS) following pneumococcal infection is a rare but can be serious.^[1] In fact many renal findings such as rising serum LDH, thrombocytopenia and rising creatinine after COVID-19 can be misleading us for pneumococcal infection solely or co-infection and its complication named as atypical HUS but the incidence of such event and its relation with streptococcal pneumonia as a causative factor of atypical HUS is unknown. There are different incidences of acute kidney injury (AKI) following COVID-19 not only among countries but cities of a country with same management guidelines,^[2] many case series tried to identify the role of super-infection in COVID-19 but none hinted the incidence of AKI in them, 16 agents identified as super-infection as a high event (49.6%) in COVID 19 include of *Klebsiella* (pneumonia and oxytoca) and *Staphylococcus aureus* as the most frequent.^[3] It seems that atypical HUS following in COVID 19 is not a common finding because of it is defined in cases reports without known causative factor that mostly recovered by using eculizumab.^[4] Such evidences show streptococcal pneumonia has not any role as a super-infection during COVID-19 or inciting factor in atypical HUS that may be seen rarely during COVID-19 epidemics bring vaccination against pneumococcus into question because of it cannot cover all serotypes and insufficient immunogenicity specially in renal failure or after organ transplantation^[5] on the other side necrotizing pneumonia (NP) as prototype of invasive pneumococcus that may herald of severe forms of renal failure was not reported following COVID-19. During COVID-19 most of NP occur as a late complication of COVID-19 mainly due to *Klebsiella pneumoniae* and *Pseudomonas aeruginosa* super-infection without significant AKI occurrence or atypical HUS in affected cases.^[6]

Acute renal failure is not a prominent event after super-infection following COVID-19 and atypical HUS is a rare event during COVID-19 mostly unknown in origin and non-related to streptococcal pneumonia especially in adults. Necrotizing pneumonia is a complication which occurs along with atypical HUS due to streptococcal pneumonia but it can be seen during COVID-19 mostly related to other infections such as *Klebsiella* and *Pseudomona*. With such findings pneumococcal vaccination is meaningless during COVID19 based on accessible literature but more research is warranted to confirm of this claim.

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Majid Malaki

Department of Pediatric Nephrology,
NICU ward of Mardom Hospital
(Bahadori Hospital), Tehran, IRAN.

*Correspondence

Mr. Majid Malaki

Assistant Professor, Department of
Pediatric Nephrology, NICU ward of
Mardom Hospital (Bahadori
Hospital), Tehran, IRAN.

Email: madjidmalaki@gmail.com

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