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Letters

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H1N1 infection and acute kidney injury in the critically ill

Sir,

Acute renal failure due to viral infections rarely occurs. We assessed the development of acute kidney injury in critically compromised patients due to H1N1 influenza virus. All patients with PCR-confirmed diagnosis of H1N1 infection between May and July 2009 were retrospectively studied. Thereafter, the risk factors associated with the development of acute renal injury, the requirements of acute haemodialysis and death were analysed. Twenty-two subjects with H1N1 pneumonia were included: age: 52.91 ± 18.89 years; gender: males 11 (50%); chronic airway disease: 9 (41%); oncohaematological disease: 8 (36.7%); cardiovascular disease: 5 (22.7%); chronic renal insufficiency: 4 (18.2%); obesity: 3 (13.6%); concomitant pregnancy: 2 (9.1%); diabetes mellitus: 2 (9.1%); previous influenza A vaccination: 9 (41%). All patients received oseltamivir within 48 h of presumed diagnosis. Seventeen patients (77.3%) developed initial fever. Six patients (27.3%) required non-invasive ventilation assistance and 15 (68.2%) received invasive ventilatory support. The mean days on mechanical respiratory assistance were 11 ± 10.35. The arterial partial pressure of oxygen/fraction of inspired oxygen ratio was 140.11 ± 83.03 mmHg. Inotropic drugs were administered to 15 patients (68.2%). Fourteen patients (63.6%) developed acute kidney injury. The mean highest creatinine levels were 2.74 ± 2.83 mg/dL. Four patients (18.2%) needed renal replacement therapy with a mean duration of 15 ± 12 days. Six patients (42.9%) recovered renal function. Significant differences between patients with and without acute kidney injury included, respectively, pregnancy, 2 versus 0, $P < 0.05$; non-haematological immunosuppression, 6 versus 0, $P < 0.05$; APACHE score, 26.64 ± 2.51 versus 14.2 ± 1.63, $P < 0.01$; SOFA score, 9.21 ± 1.01 versus 4 ± 0.94, $P < 0.01$; MURRAY score, 0.55 ± 0.34 versus 1.34 ± 2.46, $P < 0.05$; mechanical respiratory assistance, 12 versus 2, $P < 0.05$; days on mechanical ventilation, 8.5 versus 25.66, $P < 0.05$; use of inotropic drugs, 12 versus 3, $P < 0.05$; and lower platelet levels, 91828 ± 18446 versus 149 250 ± 24 181, $P < 0.05$. Haemodialysis requirements were associated with elevated SOFA scores (12.25 ± 1.75 versus 6.22 ± 0.8, $P < 0.05$), elevated creatine phosphokinase (933 ± 436.6 versus 189.9 ± 79.3 U/L, $P < 0.05$) and alanine transferase levels (843.3 ± 778.8 versus 85.33 ± 17.4 U/L, $P < 0.05$). Twelve patients died (54.6%), 10 of whom had acute renal failure (83.3%) and 3 had been on acute haemodialysis (25%). Mortality was associated with higher APACHE, SOFA and Murray scores, a higher oseltamivir dose (253.1 ± 25.8 versus 183.8 ± 27.6 mg/day, $P < 0.05$), lower oxygen inspired fraction/alveolar pressure ratio (99.3 ± 12.2 versus 196.3 ± 33.9 mmHg, $P < 0.01$), thrombocytopaenia (88 966 ± 22 977 versus 141 200 ± 17 282 mm^3, $P < 0.05$), hypoalbuminaemia (1.82 ± 0.1 versus 2.61 ± 0.2 g/dL, $P < 0.01$), acute renal failure (10 versus 4, $P < 0.05$), oligoanuria (5 versus 0, $P < 0.05$) and lack of recovery of renal function (2 versus 4, $P < 0.01$). Three out of four (75%) haemodialysed patients died. In summary**,** in the critically ill due to H1N1 pneumonia, renal insufficiency was a frequent complication, demanding renal replacement therapy in 18% of cases. The necessity of haemodialysis was associated with an elevated risk of death. Mortality was mainly associated with multiple organ failure, oligoanuria, acute renal injury and a lack of recovery of renal function. Rhabdomyolysis may play a role in renal dysfunction, regardless of CK levels [1–4].

Conflict of interest statement. None declared.

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Occult hepatitis B virus infection in a Sicilian chronic dialysis population

Sir,

Occult HBV infection with undetectable HBsAg is a risk factor for hepatic disease development. Among the general population, HBV circulation is a public health concern [1]. The DOPPS II study showed a considerable prevalence of HBV infection in dialysis populations [2]. In an Italian subset of DOPPS II, the prevalence was 6.3% [3].