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Neurological difficulties of insusceptible designated spot inhibitor malignant growth immunotherapy

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Introduction:

Patients with renal disease have increased rates of admission to the neurological intensive care unit related to overlapping risk factors for renal and cerebrovascular disease as well as unique risks associated with renal dysfunction alone. Management of acute neurological injury in these patients requires individualized attention to diagnostic and management factors as they relate to coagulopathy, disorders of immune function, encephalopathy and renal replacement modalities. Careful consideration of these brain-kidney interactions is necessary to optimize care for this special patient population and improve neurological and renal outcomes.

Objectives: Critical care neurology focuses on treatment of acute brain injury, as well as the neurological complications of both chronic and acute medical illness. Chronic kidney disease (CKD) is estimated to occur in 15% of adults in the United States and the WHO estimates that 864,226 global deaths were attributable to CKD in 2012, ranking 14th in the list of leading causes of death, with an estimated 2,968,600 disability adjusted life years lost. Patients with CKD are more likely to be hospitalized and require intensive care compared to patients with normal renal function. CKD also causes numerous physiological changes that increase the risk of neurological disease and complicate the management and outcome of neurological patients during admission and long after discharge. Given these brain-kidney interactions, it is important for practitioners who care for patients with brain injury to understand how CKD interacts with acute neurological injury to optimize care for these complex patients..

Results: Stroke is a common reason for admission to the neurological ICU, as generally patients receiving tPA and/or mechanical thrombectomy require high level of monitoring afterwards; additionally, patients with large strokes are at high risk for aspiration and respiratory failure. CKD may complicate risk-benefit assessment for acute treatment of stroke with thrombolytics, as renal disease has been associated with increased risk of thrombolytic-associated hemorrhage after ischemic stroke, a known complication of the treatment.

Conclusions: Acuity of injury and risk of herniation should be discussed before initiation of dialysis for these patients, with possible premedication using hyperosmolar therapy prior to dialysis to minimize worsening cerebral edema. Treatment with hypertonic saline or mannitol has been shown to be safe and effective in patients with renal failure. CKD is associated with increased admission rates to the hospital, increased complexity of management decisions while in the ICU, and also with worse outcomes before and after discharge. CKD has been shown to affect length of stay, with one study showing a median length of stay of 14 days for CKD patients admitted to the ICU compared to non-CKD patients.3 Furthermore, patients with CKD are more likely to die during hospitalization and to be discharged to an institution rather than home compared to their non-CKD comparison. Amongst stroke patients, CKD is associated with higher all-cause mortality in a dose-dependent fashion with increasing renal dysfunction