ACUTE TUBULAR NECROSIS DUE TO RHABDOMYOLYSIS RESULTING FROM INFLUENZA INFECTION

To the Editor: An 82-year-old man was hospitalized with delirium at the University Hospital La Milétrie in February 2005. His medical history included giant cell arteritis diagnosed 9 years before and still treated with corticosteroids (prednisolone 4 mg/d). Treatment with fentanyl (25-μg patch) and codeine (up to 2,400 mg/d) was started because of refractory sciatic pain. His medications also included paroxetin (20 mg/d), bromazepam (6 mg twice daily), and zopiclone (7.5 mg/d). The clinical examination revealed disorientation and back pain without any other abnormalities. Laboratory data were normal, and his serum creatinine level was 8.9 mg/dL. The delirium resolved after the codeine, hypnotic agents, and antidepressant drug were discontinued, but 1 week after admission, the patient presented with a influenzalike syndrome: fever (38.2°C), rhinorrhea, and diffuse myalgias. He had been vaccinated against influenza 4 months earlier. Despite the vaccination, a nasopharyngeal swab confirmed infection with influenza (A/H3N2 virus). A routine laboratory examination revealed acute renal failure; his creatinine serum level was 7 mg/dL, associated with rhabdomyolysis with an elevated serum level of creatine phosphokinase (CPK) (13,212 UI/L) (normal < 120) and high myoglobin (5,260 μg/L) (normal < 90). Urinalysis disclosed proteinuria (0.5 g/d) and microhematuria. Renal echography was normal. Acute tubular necrosis was suspected. Because of pulmonary edema, the patient was transferred to the Department of Nephrology for dialysis. After hemodialysis, the patient recovered slowly, and his creatinine serum level decreased to 2.9 mg/dL 1 week later and 1.1 mg/dL 1 month later. The patient was discharged from the hospital to his home.

A case of severe rhabdomyolysis after influenza is reported. Muscular weakness and pain were the main symptoms, although in 50% of cases of rhabdomyolysis, patients do not complain of myalgia.1 Up to 40% of patients with rhabdomyolysis develop acute renal failure. Hypovolemia and the direct nephrotoxic effects of components of myoglobin explain the renal failure.2 The initial development of delirium might have enhanced the risk of dehydration in this patient because of poor fluid intake. Rhabdomyolysis represents muscle necrosis due to increased intracellular calcium and obstruction of the tubules by myoglobin.3 CPK appears to be the most sensitive marker for muscle necrosis.4 A peak CPK value of 230,600 UI/L has been reported after a viral illness.5 Influenza is the most common infectious precipitant of rhabdomyolysis and has been reported in 25 of 59 cases in a review of the literature.6 A direct viral invasion can precipitate rhabdomyolysis. Early and aggressive intravenous fluid therapy usually is recommended to prevent acute renal failure. Alkalization of the urine might protect against precipitation of myoglobin. The current results also highlight the need to improve vaccination rates against influenza in healthcare professionals, because this elderly patient, despite a previous vaccination, became infected while in the hospital.

Christine Pradère, MD
Department of Geriatrics
David Planchard, MD
Department of Pneumology
University Hospital La Milétrie
Poitiers, France

Chloé Plouzeau, MD
Laboratory of Virology
Poitiers, France

Isabelle Merlet-Chicoine, MD
Simon Valéro, MD
Marc Paccalin, MD
Department of Geriatrics
University Hospital La Milétrie
Poitiers, France

ACKNOWLEDGMENTS

Financial Disclosure: No financial support for any authors

Author Contributions: Pradère and Paccalin: acquisition of subjects and/or data, and preparation of manuscript. Planchard, Plouzeau, Merlet-Chicoine, and Valéro: preparation of manuscript.

Sponsor’s Role: No sponsor.

REFERENCES


OLDER PEOPLE INVOLVED IN PHYSICAL ACTIVITY BENEFIT FROM WATER EXERCISE, SHOWING LONGER TOTAL SLEEP TIME

To the Editor: Various studies have indicated that daily physical exercise improves the quality and efficiency of sleep in the general population.1–3 The objective of the present study was to analyze the effect of water exercise, weight training, and aerobic exercise on total sleep time (TST) in individuals performing regular physical activity.

Ninety-five individuals (76 women) aged 18 and older, participating in strength training (35 subjects), water exercise (37 subjects), and aerobic exercise (23 subjects) were studied (Table 1). Subjects practicing two physical activities at the same time were excluded. The subjects received a sleep diary to be kept for 4 weeks. Analysis of variance was