

LETTERS TO EDITOR

Dear Sir,

Mirahmadi *et al.* (Prediction of creatinine clearance from serum creatinine in spinal cord injury patients, *Paraplegia*, 21, (1983), 23-29), reported about their experiences with the prediction of the creatinine clearance from serum creatinine, bodyweight, sex and age in spinal cord injury patients.

In the discussion on the results they mention as one of the reasons for the low serum creatinine levels the reduction of muscle mass due to severe muscle atrophy in spinal cord injury patients.

Unfortunately, they do not mention the type of paralysis in their patients.

It could be possible that the type of paralysis influences the correction factors used by Mirahmadi. Can the given correction factors be used both for patients with spastic and flaccid paralysis?

Are the correction factors only valid for patients with complete type of injury?

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This letter was sent to the authors: Dr N. D. Vaziri, Dr C. H. Barton and Dr M. K. Mirahmadi, who replied:

Doctors Bakx and Pons raise an interesting point on how the types of paralysis (spastic vs flaccid) might influence muscle mass and hence the prediction of creatinine clearance from serum creatinine in spinal cord injury patients. Although muscle atrophy would be an expected result in either spastic or flaccid paralysis with disuse atrophy occurring in the former and denervation atrophy occurring in the latter condition, more severe atrophy would be expected following denervation. However, in spastic paralysis of many years duration quite severe muscle atrophy can be seen.

The spinal cord injury patients in our study were identified as paraplegics (22 patients) and tetraplegics (36 patients) and as reported the paraplegics had significantly higher serum creatinine values and higher urinary creatinine excretion per kg of body weight than that of the tetraplegics. These findings obviously indicate a greater reduction in muscle mass in the tetraplegic patients. As a result, these patients required a correction factor of 0.6 when using the Cockcroft and Gault formula to predict creatinine clearance.

The vast majority of our tetraplegics had combined upper and lower motor neuron lesions with upper extremity flaccidity and lower extremity spasticity and, therefore, could not be classified as purely flaccid or spastic. On the other hand, our paraplegic patients were for the most part spastic. This group as a whole had reductions in muscle mass that were less severe than the tetraplegics. As we did not specifically study flaccid paraplegic patients we do not know whether or not such patients would have more severe muscle atrophy and require a greater correction factor. Additional studies comparing flaccid and spastic paraplegic patients would be required to adequately answer this interesting question.