

CHRONIC KIDNEY DISEASE

Walking reduces inflammation in predialysis CKD

Walking exercise is safe from an immunological perspective and has anti-inflammatory effects in patients with predialysis chronic kidney disease (CKD), according to new data from João Viana and colleagues. They suggest that these patients should be encouraged to take part in regular exercise as this will promote a healthy, more-active lifestyle that might have cardiovascular benefits.

Immune dysfunction in CKD is associated with impaired immune cell

function, which predisposes patients to infections, and chronic inflammation, which is associated with an increased risk of cardiovascular disease. “Exercise might exert anti-inflammatory effects and enhance immunity, but these potential benefits have largely been unexplored in CKD, particularly in patients who are not on dialysis,” says Viana.

To address this knowledge gap, the researchers investigated the effects of acute and regular exercise on immune cell function and markers of systemic inflammation in patients with predialysis CKD. “We chose walking as the exercise intervention because it is something that nearly all of our patients can do by themselves at home,” explains Viana.

In the acute exercise study ($n = 15$), 30 min of moderate-intensity walking on a treadmill had no effect on T-cell or monocyte activation but enhanced neutrophil function and induced a systemic anti-inflammatory environment as evidenced by an increase in plasma IL-10 levels during the 1-hour recovery

period. Similarly, a 6-month programme of regular exercise (five 30-min walks per week) resulted in reductions in T-cell and monocyte activation and markers of systemic inflammation in the intervention group ($n = 20$) compared with a habitual physical activity group ($n = 20$). No evidence of negative effects of acute or regular exercise on immune cells or inflammatory responses was observed.

“Our study shows that just a modest amount of exercise exerts anti-inflammatory effects in patients with predialysis CKD and might, therefore, reduce their high risk of cardiovascular disease,” concludes Viana. The researchers hope that their study—and further investigations into the effects of physical activity in patients with CKD—will enable tailoring of future exercise guidelines for this population.

Ellen F. Carney

Original article Viana, J. L. *et al.* Evidence for anti-inflammatory effects of exercise in CKD. *J. Am. Soc. Nephrol.* doi:10.1681/ASN.2013070702



hoozone/iStock/Thinkstock