

## **INTRADIALYTIC MODIFIED TAI CHI EXERCISE IMPROVES BALANCE IN HEMODIALYSIS PATIENTS**

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Falls and related bone fractures are common problems among hemodialysis (HD) patients who have underlying weak bone and high risk of falls. Of all the balance exercises, Tai Chi (TC) has proved to be one of the most successful in decreasing risk of falls. However, no study has investigated the effect of TC on risk of falls in HD patients. This is the first study that implemented an intradialytic modified TC (IMTC) which has the advantages of requiring no equipment and little training or supervision. The objectives were to test the feasibility and to determine the impact of a 12-week IMTC intervention on balance, gait and functional strength in HD patients. Maintenance HD patients (n=21, 52.2±12.1 yr, 9 females) were recruited from a local dialysis center and screened based on clinical criteria. All participants were encouraged to perform IMTC for 1 hr within the first 2 hours of each 4-hr HD session, 3×/wk. The IMTC was designed based on traditional TC for a patient to perform while sitting in a dialysis chair with one arm connected to the dialysis machine. Berg Balance Scale (BBS), Dynamic Gait Index (DGI) and Timed Up & Go (TUG) test were assessed at baseline and 12 wk. Data were analyzed by paired *t* test. Participants needed less than 3 hr to learn the exercise, and were then able to perform the exercise with complete independence following a written instruction. IMTC never caused any interference or inconvenience to HD treatment and no adverse effect was observed or reported. IMTC improved BBS ( $P = 0.06$ ), with greater percentage improvement observed in patients with lower baseline BBS score. The DGI and TUG data showed a trend of improvement, but failed to achieve statistical significance ( $P = 0.2, 0.3$ , respectively). We conclude that IMTC may be a feasible, low-cost, and effective exercise to improve balance in maintenance HD patients. Further long-term studies with larger sample size to establish the benefits of IMTC in HD patients are needed.