A Malnutrition-Inflammation Score is Correlated with Mortality in Maintenance Hemodialysis Patients. Kamyar Kalantar-Zadeh, MD, MPH; Joel D Kopple, MD; Gladys Block, PhD; Michael H Humphreys; MD. Harbor-UCLA Medical Center, Torrance; San Francisco General Hospital; and UC Berkeley, School of Public Health; California.

The "Malnutrition Inflammation Complex Syndrome" (MICS) occurs commonly in maintenance hemodialysis (MHD) patients and correlates with increased morbidity and mortality. An optimal, comprehensive, quantitative system that assesses MICS may be a predictor of mortality in MHD patients. Using the components of the conventional SGA (Subjective Global Assessment), a fully quantitative "Dialysis Malnutrition Score" (DMS), consisting of 7 SGA components was first created. Then the "Malnutrition Inflammation Score" (MIS) was developed by adding 3 new components (body mass index, serum albumin and transferrin) to the original DMS along with further modification of its criteria. We showed previously that the MIS correlated significantly with conventional measures of nutrition/inflammation and prospective hospitalization [AJKD, 2000, 35(4):A29]. Recently 12-month mortality data became available. Eighty-three outpatients (44 men, 30 women, age 59±15 years) receiving MHD for at least 3 months (43±33 months) were evaluated at the beginning of this study. The SGA, DMS and MIS were assessed simultaneously on all patients by a trained physician. Patients were followed for 12 months except for 9 patients who died and 6 who left the cohort during this time. The relative risk of death by Cox proportional hazard for each 10 unit increase in MIS was 10.43 (95% CI: 2.28-47.64, p-value 0.002). The MIS was significantly more powerful than its components, the SGA or the DMS for predicting mortality. Hence, the MIS appears to be a comprehensive scoring system with significant, strong associations not only with measures of nutritional status, inflammation, anemia and prospective hospitalization but also with mortality. It appears to assess reliably the nutritional and inflammatory state and can predict the risk of morbidity and mortality in MHD patients. The MIS may be superior to conventional SGA and the DMS for assessing outcomes in MHD patients.