

**BODY COMPOSITION AND ALL-CAUSE MORTALITY IN HEMODIALYSIS PATIENTS** *Cindy Huang<sup>1</sup>, Hocine Tighiouart<sup>1</sup>, Srinivasan Beddhu<sup>2</sup>, Alfred Cheung<sup>2</sup>, Dwyer, Johanna<sup>1</sup>, Garabed Eknoyan<sup>3</sup>, Gerald Beck<sup>4</sup>, Andrew Levey<sup>1</sup>, Mark Sarnak<sup>1</sup>.* <sup>1</sup> Tufts Medical Center, Boston, MA; <sup>2</sup> Univ. of Utah, Salt Lake City, UT; <sup>3</sup> Baylor College of Medicine, Houston, TX; <sup>4</sup> Cleveland Clinic, Cleveland, OH

Studies have suggested that higher body mass index (BMI) is protective in hemodialysis (HD) patients. BMI however does not differentiate between adipose tissue and muscle mass. We therefore examined the relationship of various anthropometric measures to mortality in the HEMO study. Triceps skinfold was used to assess body fat, mid-arm muscle circumference (MAMC) calculated from a standard formula (MAMC=upper arm circumference- $\pi$ \*triceps skinfold) was used to assess muscle mass. Cox regression was used to evaluate the relationship between body fat, MAMC and BMI with all cause mortality adjusted for demographics, cardiovascular risk factors, dialysis related and nutritional factors. Mean age was 58 years (n=1846). There were 56% females, 63% African Americans, and 45% diabetics. The mean (SD) of triceps skinfold, MAMC and BMI were 1.64 (0.79) cm, 24.79 (3.84) cm and 25.46 (5.28) respectively. During a mean follow up of 4.2 years, there were 871 deaths. Higher BMI, MAMC and body fat were all associated with lower mortality in adjusted continuous analysis (Table, p<0.01). Higher quartiles of BMI and MAMC were associated with lower all-cause mortality in unadjusted models, while the higher quartiles of all three measures were protective in comparison with the lower quartiles in adjusted models (Table, p<0.01). We conclude both higher muscle mass and fat mass are associated with decreased all-cause mortality in HD patients.

**Table.** Hazard ratios between anthropometric measures and all-cause mortality\*

	BMI	Triceps skinfold	MAMC
Quartile 2#	0.76 (0.62-0.94)	0.74 (0.59-0.91)	0.64 (0.52-0.79)
Quartile 3#	0.64 (0.52-0.79)	0.71 (0.56-0.89)	0.61 (0.49-0.76)
Quartile 4#	0.58 (0.49-0.73)	0.59 (0.46-0.75)	0.59 (0.48-0.74)
Continuous§	0.82 (0.76-0.90)	0.84 (0.77-0.93)	0.87 (0.80-0.92)

\*Adjusted for age, sex, race, diabetes, CVD, vintage, calcium, creatinine, albumin, hematocrit, bicarbonate, phosphorous, PTH, baseline ICED score, underlying renal disease, high flux vs low flux, high dose vs standard dose randomization. # Use quartile 1 as the reference. § Per 1 SD increase of BMI, triceps skinfold or MAMC