INTRODUCTION AND AIMS: It has been previously reported that HD patients evidenced chronic elevation of cTn levels, leading to inconclusive interpretation of a single troponin (cTnT) value above the 99th percentile. Therefore, serial measures of circulating cTn are needed to distinguish between acute coronary syndrome and chronic elevation of cTnT in HD. However, the magnitude of cTnT change in HD that is clinically relevant both for myocardial infarction diagnosis and for the worsening of chronic cardiac disease remains to be defined. Indeed, some parameters including renal removal impairment, adsorption onto dialyzer membranes or change in troponin molecular structure could influence cTnT levels. In our study we investigated the influence of a single dialysis session on troponin T levels using a high sensitive assay (cTnTHS).

METHODS: We included 93 patients without cardiovascular acute events (M 54%; W 46%) with a mean age of 65.1 ± 15.3 years. Diabetes was present in 1/3 of our population and 2/3 of patients showed a past history of cardiovascular comorbidity (CC).

RESULTS: cTnTHS assays, performed during a midweek dialysis session, revealed a value >99 percentile in 87% patients; the mean value was 64.8 ± 47.8 with a median value of 55 ng/l. We found significantly age and predialysis cTnTHS correlation (R=0.23, p<0.02). Patients with diabetes and prior CC showed a significantly higher pre dialysis levels of cTnTHS (83.0 ± 68.6 vs 56.6 ± 31.9 and 73.3 ± 50.6 vs 45.2 ± 33.7; ANOVA p<0.01 and p<0.001). The post dialysis cTnTHS mean and median value were 47.2 ± 32.1 and 40 ng/l. Only 11 patients showed an increase in post dialysis cTnTHS. After correction by ultrafiltration, the reduction ratio was of 24% and significantly greater in HDF treatments (29.7 ± 13.2 vs 11.4 ± 12; ANOVA p<0.001). No correlation were found between pre and post dialysis cTnTHS values and ultrafiltration rate and blood pressure trend during dialysis session.

CONCLUSIONS: Independently of the presence of acute signs of cardiac disease, our results confirms the elevated levels of cTnTHS in a cohort of dialysis patients. Regarding intradialytic variations, the study indicate, that HD procedure can affect blood concentration especially in patients with HDF treatment.