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ACUTE EFFECTS OF CARDIAC SURGERY ON 25 (OH) VITAMIN D (VITD) LEVELS AND RESPONSE TO VITD SUPPLEMENTATION: PRIMARY RESULTS OF THE ASSESS-D STUDY

Poster Contributions
Poster Hall, Hall A/B
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Session Title: Pharmacologic and Non-Pharmacologic Updates in Cardiovascular Disease
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Background: Acute myocardial infarction (AMI) pts have significantly lower blood levels of vitamin D (VitD) than controls. Whether low VitD levels contribute to causing or exacerbating AMI or are simply a result of the acute AMI response, and how effective preemptive VitD supplementation (VitD-S) is on reversing low VitD levels are unknown. To evaluate these questions we studied a similarly stressful event, open-heart surgery, on VitD and its reversal with supplementation.

Methods: Elective open-heart surgery pts (n=150) were randomized 1:1 to receive 3 daily 50,000 unit doses of VitD3 (1st dose pre-procedure) or placebo (PBO). Pts were followed throughout hospitalization and at 6 months for VitD levels and major adverse CV events (MACE).

Results: Baseline characteristics (age = 62±13 yrs; males = 79%; surgical indication: CAD = 42%) were similar in the 2 groups. Baseline VitD (24.9±14.9 ng/mL) was low and did not differ between groups (p=0.37). VitD dropped from baseline to 24 hours post-surgery in the PBO (p=0.005), but rose in the VitD-S group (p<0.0001) (Figure). By 6 months, VitD levels converged in the PBO and VitD-S group to 30.0±15.8 ng/mL, the lower range of normal. Adjudicated MACE events will be available for presentation at the conference.

Conclusion: Cardiac surgery pts present with low VitD, and the stress of surgery is associated with further (13.4%) immediate reductions in VitD that persist through discharge, resolving by 6 months. Supplementation eliminates hypovitaminosis-D.

Figure 1. Mean 25(OH) Vitamin D levels (ng/mL) obtained pre-procedure, at various in-hospital time periods, and at six months, for patients receiving vitamin D3 supplementation versus placebo. All time-wise comparisons between treatment arms post-surgery were statistically significant (p<0.05), except at six months.