p=0.014) on the leg press. For both exercises at 40% and 80% 1RM, no significant change in LVOT gradient was observed with coached breathing (with or without Valsalva maneuver) (Figure 1). In a sub-analysis of patients with oHCM no significant increase in the LVOT gradient was observed but during 40% 1RM leg press, there was a trend toward an increase in the median LVOT gradient (from 13.7mmHg (8.9-44.7) to 35mmHg (17.9-53.2), p=0.064). Systolic blood pressure, heart rate and cardiac index did not significantly change with resistance exercise. **Conclusion:** Participation in low and high intensity resistance exercises did not result in large increases in LVOT gradients regardless of breathing patterns. This may suggest loosening restrictions on resistance exercise in patients with HCM.

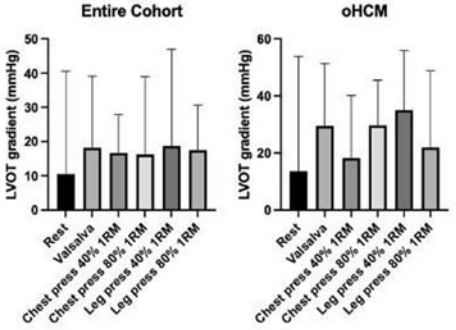

Figure 1: Effect of resistance exercise on LVOT gradient in entire cohort and subset of oHCM patients

RAPID FIRE SESSION – CARDIO-OBSTETRICS & CRITICAL ILLNESS (RF)

Presented Sunday, June 16, 1:00 PM-1:45 PM

Cardio-Obstetrics
RF-07 through RF-09

Critical Illness
RF-10 through RF-12

RF-07

Maternal Exposure to Ambient Ozone and Fetal Conotruncal Congenital Heart Defects in China A Large Multicenter Cohort Study

Yanping Ruan[1], Yihua He[1], Yaqi Wang[2], Xiaoxue Zhou[1], Jing Li[2], Zhiyong Zou[2]. [1]Beijing Anzhen Hospital, Capital Medical University, beijing, China; [2]School of Public Health, Peking University, beijing, China

Background: The association between conotruncal heart defects (CTDs) and maternal genetic and environmental exposures is well studied. However, little is known about air pollution and risk of CTDs. We aimed to investigate the association between maternal exposure to ozone and CTDs in China. **Method:** Pregnant women who underwent fetal echocardiography were consecutively recruited in our hospital between Jan 2013 and Dec 2021. The maternal sociodemographic and lifestyle characteristics and some fetal factors were obtained. Fetal echocardiography is used to evaluate the fetus with CTDs, as an outcome variable. Address of hospitals for prenatal checkups during Pregnancy was linked to estimate maternal exposure to ambient ozone during the first trimester, during 3 months prior to last menstrual period (LMP) and during periconception period. Adjusted logistic regression models were used to assess the associations between per 10 μg/m3 or per quartile increase in ambient ozone exposure and CTDs. **Results:** A total of 24,278 subjects were enrolled, of whom 1,069 had CTDs fetuses. Logistic regression analyses showed that maternal exposure to ambient ozone during three periods were associated with an increased risk of CTDs. The adjusted odds ratio and 95% confidence interval (CI) was 1.271(1.189-1.360) for per 10 μg/m3 increase in ozone during periconception period. Ozone was divided into quartiles, and the first quartile was used as a reference. The risk gradually increased with increasing exposure concentrations, with the most pronounced effect values during the periconceptional period (OR=2.206 for quartile 2, 2.367 for quartile 3, and 3.378 for quartile 4, all P<0.05). **Conclusions:** Maternal exposure to greater levels of ozone during the pregnancy, especially during the periconception period, is associated with higher risk of fetal CTDs. Further longitudinal well-designed studies are needed to confirm our findings.

Table 1 Estimated ORs and 95% CIsa of CTD associated with exposure to ambient O3 during periconcept

O_3 exposure	Model 1[c]ORs (95% CIs)[a]	Model 2[d]ORs (95% CIs)[a]	Model 3[e]ORs (95% CIs)[a]
Per 10 ug/m^3	1.361 (1.274, 1.454)	1.385 (1.296, 1.480)	1.271 (1.189, 1.360)
Quartile 1	Ref	Ref	Ref
Quartile 2	1.467 (1.212, 1.777)	1.499 (1.237, 1.816)	1.336 (1.089, 1.638)
Quartile 3	2.273 (1.831, 2.822)	2.285 (1.839, 2.839)	1.901 (1.433, 2.521)
Quartile 4	3.008 (2.236, 4.046)	3.122 (2.318, 4.206)	2.428 (1.716, 3.435)
P for linear trend[f]	<0.001	<0.001	<0.001

RF-08

Echocardiographic Parameters Associated with Future Hypertension in Patients with Preeclampsia

Anushree Puttur[1], Laith Alhuneafat[2], Kathryn Manalo[1], Sana Khan[1], Xiarepati Tieliwaerdi[1], Alexis Arrigo[1], Brent Williams[1], Indu Poornima[1]. [1]Allegheny General Hospital, Pittsburgh, PA; [2]University of Minnesota, Minneapolis, MN

Background: Preeclampsia (PrE) affects maternal health, and although echocardiograms are often performed in these cases, there is limited research on how echocardiographic changes influence outcomes. **Objectives:** The purpose of this study was to retrospectively evaluate the echocardiographic changes in women with PrE and their subsequent impact on diagnosis of hypertension at follow up. **Methods:** We retrospectively examined echocardiographic predictors for future diagnosis of hypertension in women with PrE within Allegheny Health Network. Echocardiograms were performed during or within the first 3 months of delivery. Exclusion criteria included age <18 years, diagnosis of pulmonary embolism, malignancy, autoimmune disease, and structural heart disease. Echo predictors of future hypertension (defined as use of antihypertensive medications or BP> 130/85 mm Hg in the postpartum period) was assessed by regression analysis after adjustment for age, body mass index, race, smoking status, gestational diabetes, and non-gestational diabetes. **Results:** Out of 252 women diagnosed with preeclampsia included in our study, 119 (47.22%) were subsequently diagnosed with hypertension during follow-up. Mean follow-up was 2.3 years. Elevated Left Ventricular Mass Index (LVMi) (86.28 vs 79.39, p=0.04), increased Interventricular Septal Thickness (IVSD) (1.06 vs 0.97, p<0.001), and higher Lateral e' (3.23 vs 3.06, p=0.03) were associated with a diagnosis of hypertension during follow-up. Additionally, having LVMi exceeding 95 g/m2 showed a significant association with future hypertension (Adjusted Odds Ratio 3.11, 95% CI 1.60 to 6.05, p<0.001).