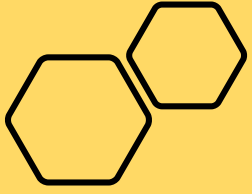
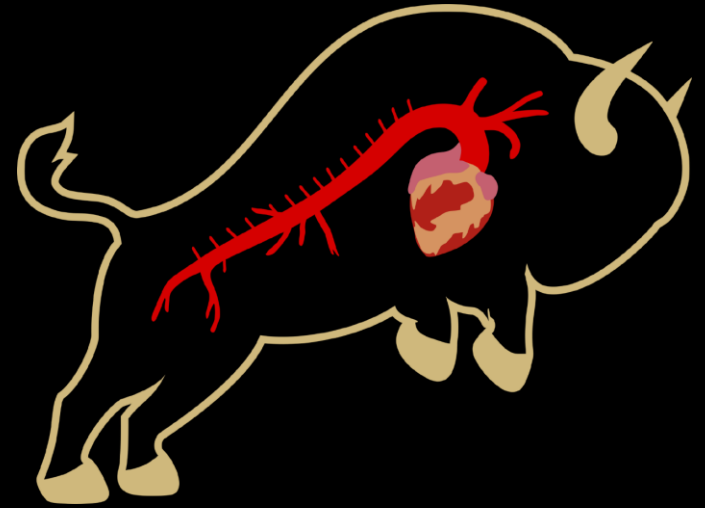
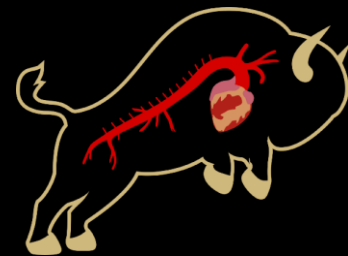


Baseline Hemoglobin as a  
Predictor of Outcomes  
Following Hemiarch Aortic  
Reconstruction



No disclosures



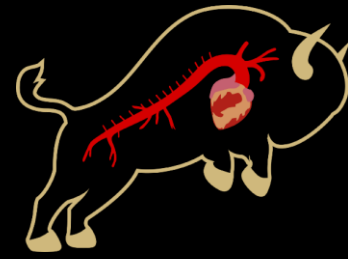


# Introduction

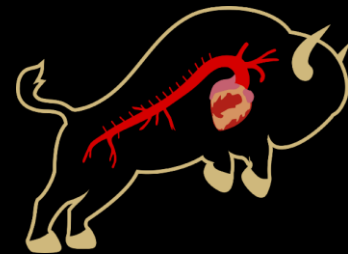
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- Neuroprotection and surgical techniques have improved in recent years
- This has reduced the morbidity of hemiarach reconstruction
- Previous studies show anemic patients have more complications

# Aim



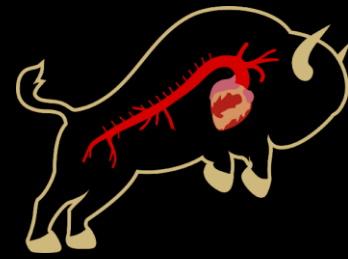
- To describe our institutional experience with elective hemiarch aortic reconstruction
- To assess the association of preoperative lab markers with morbidity and mortality



# Methods

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- Retrospective review of prospectively-maintained institutional aortic database from February 2011-October 2023
- Identified all patients who underwent elective aortic arch reconstruction with hemiarch aortic reconstruction

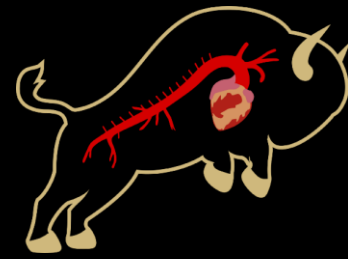


# Results

- 427 patients underwent hemiarch
- 327 (76.6%) were male
- 39 (9.1%) had a previous aortic surgery
- Aneurysm (n=396, 92.7%) was the most common presentation

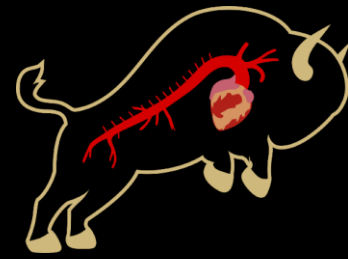
**Table 1. Summary of Patient Demographic Characteristics and Comorbidities**

	<b>Hemiarch (N=427)</b>
<b>Age (Years)</b>	
Median [IQR]	62.0 [50.3, 69.6]
<b>BMI</b>	
Median [IQR]	27.5 [24.4, 31.9]
<b>Gender Male</b>	327 (76.6%)
<b>Diabetes</b>	50 (11.7%)
<b>Dyslipidemia</b>	163 (38.2%)
<b>CAD</b>	80 (18.7%)
<b>Stroke</b>	21 (4.9%)
<b>Pulmonary (including OSA)</b>	96 (22.5%)
<b>Renal Disease</b>	34 (8.0%)
<b>Smoking</b>	103 (24.1%)
<b>History of aortic surgery</b>	39 (9.1%)



# Results

- Baseline Hemoglobin 13.7 ( $\pm 1.84$ ) g/dL
- Baseline Platelets 221 ( $\pm 64.0$ )  $10^9/L$
- Baseline INR 1.11 ( $\pm 0.202$ )



# Results

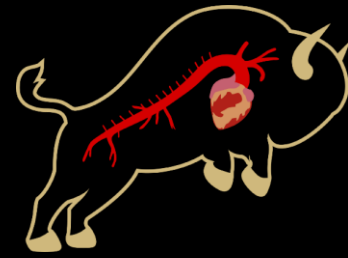
- 293 (68.6%) of patients received intraoperative blood products
- Platelets (n=266, 62.3%) were the most common
- 7 (1.6%) patients died during their postoperative hospitalization

**Table 2. Postoperative Outcomes and Morbidities, Including Neurologic Outcomes, End-Organ Dysfunction, and Mortality**

	Hemiarch (N=427)
<b>Cardiopulmonary Bypass Time (Min)</b>	
Mean (SD)	148 (55.1)
<b>Aortic Cross-Clamp Time (Min)</b>	
Mean (SD)	104 (47.8)
<b>Circulatory Arrest Time (Min)</b>	
Mean (SD)	9.97 (6.53)
<b>Intraoperative Transfusion</b>	293 (68.6%)
<b>ICU Length of Stay (Days)</b>	
Mean (SD)	58 (13.6%)
<b>Stroke</b>	11 (2.6%)
<b>KDIGO Acute Kidney Injury</b>	
1	13 (3.0%)
2 or Greater	15 (3.5%)
<b>Postoperative In-House Mortality</b>	7 (1.6%)



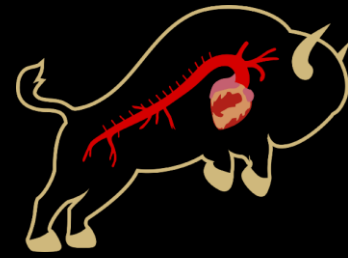
# Results



## Univariate Analysis for Independent Predictors of Postoperative Complication

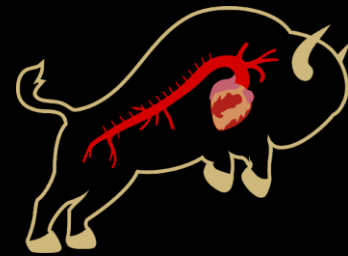
Predictor	OR	95% CI	P-Value
Age $\geq$ 65	1.94	1.31–2.88	<u>0.001</u>
Diabetes	2.31	1.26–4.39	<u>0.008</u>
Pulmonary Disease	1.45	0.92 – 2.30	0.110
Chronic Kidney Disease	2.10	1.03–4.50	<u>0.046</u>
Coronary Artery Disease	2.06	1.26 – 3.43	<u>0.004</u>
Preoperative Hemoglobin	0.92	0.82 – 1.02	0.098
Baseline Platelets	1.00	1.00 – 1.00	0.644

# Results



## Multivariate Analysis for Independent Predictors of Postoperative Complication

Predictor	OR	95% CI	P-Value
Age $\geq$ 65	1.55	1.01 – 2.36	<b><u>0.043</u></b>
Diabetes	1.44	0.74 – 2.86	0.283
Pulmonary Disease	1.18	0.73 – 1.93	0.492
Chronic Kidney Disease	1.75	0.83 – 3.82	0.148
Coronary Artery Disease	1.66	0.97 – 2.86	0.066
Preoperative Hemoglobin	0.91	0.82 – 1.02	0.117



# Conclusions

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- Preoperative hemoglobin was not associated with postoperative complications
- This suggests that potentially optimizing intraoperative oxygen delivery reverses the risk of anemia
- These data differ from published data, potentially because of our institutional practices for optimizing  $DO_2$



Thank You!