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Anemia at Presentation Predicts Acute Mortality and Need for Readmission Following Geriatric Hip Fracture http://dx.doi.org/10.2106/JBJS.OA.20.00048

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Appendix A: Current Procedural Terminology (CPT) Codes

27236: Open treatment of femoral fracture, proximal end, neck, internal fixation or prosthetic replacement

27244: Treatment of intertrochanteric, peritrochanteric, or subtrochanteric femoral fracture; with plate/screw type implant, with or without cerclage

27245: Treatment of intertrochanteric, peritrochanteric, or subtrochanteric femoral fracture; with intramedullary implant, with or without interlocking screws and/or cerclage

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Appendix B: Analysis of hematocrit as a continuous variable

Table B-1: Adjusted analysis of hematocrit and time to surgery as continuous variables							
	Readmission	MI	CVA	Death			
HCT	0.98 (0.97-0.99)*	1.01 (0.99-1.03)	1.03 (1.00-1.05)	0.98 (0.97-0.99)*			

Note: HCT, hematocrit; MI, myocardial infarction; CVA, cerebrovascular accident.

In addition to categorical analysis, hematocrit was analyzed as a continuous variable while adjusting for age, race, sex, BMI, functional status, diabetes, smoking status, hypertension, COPD, CHF, kidney disease requiring dialysis, ASA class, need for pRBC transfusion, fixation method, anesthesia type, time to surgery, and operative length. For each percentage increase in HCT, the odds of readmission decreased by 0.98 (95%CI:0.97-0.99) and death by 0.98 (95%CI:0.97-0.99), however, these differences are likely too small to be clinically significant.

Table B-2: ROC cut offs for HCT for each outcome (using Youden's J statistic)					
	HCT Cut-Off Male	HCT Cut-off Female			
Mortality	0.33	0.35			
Readmission	0.36	0.34			
MI	0.37	0.34			
CVA	0.43	0.33			

Note: HCT, hematocrit; MI, myocardial infarction; CVA, cerebrovascular accident.

Optimal HCT cut offs associated with readmission, MI and CVA are summarized in Table B-2. Most notably, a hematocrit below 0.33 for males and 0.35 for females was most strongly associated with mortality (OR 1.20, 95%CI:1.05-1.36, C=0.811) [Table B-3]. As such, it can be inferred that there is some degree of leeway below the conventional definition of anemia (HCT <0.41 and <0.36 for males and females, respectively) before mortality risk increases.

Table B-3: Adjusted analysis of hematocrit and time to surgery using ROC cut-offs							
	Readmission	MI	CVA	Death			
Low HCT	1.20 (1.10-1.31)*	1.00 (0.83-1.21)	0.85 (0.62-1.17)	1.20 (1.05-1.36)*			
C-Statistic	0.639	0.720	0.674	0.811			

Note: HCT, hematocrit; MI, myocardial infarction; CVA, cerebrovascular accident.