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Title: NHANES III: The Distribution of Hemoglobin Levels Related to Chronic Kidney Disease (CKD), Diabetes (DM), and Congestive Heart Failure (CHF)

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Abstract:

NHANES III is a cross-sectional study conducted (1988-94) providing demographic, clinical, and laboratory data enabling the estimation of prevalence of medical conditions in the general U.S. population. We used the NHANES III database to estimate the prevalence of CKD (defined as eGFR, MDRD formula, < 30 ml/min/1.73 m² or NKF stage IV+ chronic kidney disease) and concomitant CHF or DM in the U.S. population. The distribution of hemoglobin values in patients afflicted with those diseases is tabulated below. The percentages refer to the proportion of each hemoglobin range by condition. As shown in the Table, there is a gradient of increasing anemia risk related to the presence of CKD and other concomitant comorbid conditions. About half of patients with CKD and concomitant CHF+DM are anemic.

Projected Patient Counts in the US, in 1,000's, as of 1990					
Disease	Hgb <10 gm/dl	Hgb 10-12 gm/dl	Hgb 12-14 gm/dl	Hgb >14 gm/dl	Total
None	640 (0.4%)	8,718 (5.3%)	63,810 (38.7%)	91,680 (55.6%)	164,848
CKD	18 (4.9%)	140 (37.7%)	152 (41.0%)	61 (16.4%)	371
CKD/CHF	5 (7.9%)	28 (44.4%)	5 (7.9%)	25 (39.7%)	63
CKD/DM	31 (32.3%)	25 (26.0%)	37 (38.5%)	3 (3.1%)	96
CKD/CHF/DM	30 (42.9%)	7 (10.0%)	6 (8.6%)	27 (38.6%)	70

Conclusion: The risk of anemia is increased five to ten-fold in patients with CKD, compared to the general population. Anemia is clustered in patients with multiple comorbid conditions, particularly in patients with CKD, CHF, and DM. These data suggest that anemia is common in these chronic diseases and is a risk factor amenable to treatment, particularly related to complications such as advancing CHF.

Disclosure:

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