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Title: Intractable Anemia: A Description of Incident Hemodialysis (HD) Patients with Hemoglobin Levels Consistently Less Than 11 g/dl.

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Abstract:

Most incident HD patients who initiate with a hemoglobin (Hgb) level below the K-DOQI target of 11 g/dl are able to achieve this level after a few months of recombinant human erythropoietin (rhuEPO) therapy. However, patients unable to achieve this level may be at a higher risk of adverse outcomes. This hypothesis was tested in a cohort study of 106,047 incident HD patients from 1996 to 2000 who regularly received rhuEPO, comparing patients who did not achieve 11 g/dl during months 4 to 9 following initiation to those who did. Medicare claims data were searched to determine demographic characteristics, comorbidities, hospitalizations, and related events, and comparisons of these between incident HD patients who did not achieve 11 g/dl (n=8,604) and those who did achieve that level (n=97,443) revealed noticeable differences, shown in the table below.

Clinical Characteristics of patients incident in 2000		
Clinical Characteristics*	Hgb < 11 g/dl	Hgb 11+ g/dl
Age Less than 45 Years	16.5	10.9
Non-White Race (%)	48.3	38.0
Congestive Heart Failure (%)	41.7	28.9
Received IV Iron (%)	74.9	87.1
Received Blood Transfusion (%)	19.3	4.2
Lupus, AIDS or Mult. Myel. as Primary Cause of ESRD (%)	5.6	2.1
Multiple (4+) Catheter Insertions (%)	12.0	5.5
At least 1 Infectious Hospitalization (%)	63.2	44.2
At least 1 Catheter Infection (%)	17.2	8.7
Mean Weekly rhuEPO Dose in Month 9	28,756	14,634

*all are statistically significant at .0001

Patients unable to achieve a Hgb of 11 g/dl were younger, and more often of non-white races. They had more comorbid conditions, more hospitalizations with longer stays, and more infectious hospitalizations (all cause as well as vascular access infections). They also had more blood transfusions and a higher mean weekly rhuEPO dose, but fewer received intravenous (IV) iron during the same time period. It is apparent that incident HD patients unable to achieve a Hgb of 11 g/dl have a higher disease burden and more inflammatory vascular access events. It is unclear whether 'intractable anemia' is a problem in itself, or associated with potentially causative factors.