THE EFFECTS OF NORMAL AS COMPARED WITH LOW HEMATOCRIT VALUES IN PATIENTS WITH CARDIAC DISEASE WHO ARE RECEIVING HEMODIALYSIS AND EPOETIN

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Background: In patients with end-stage renal disease, anemia develops as a result of erythropoietin deficiency, and recombinant human erythropoietin (epoetin) is prescribed to correct the anemia partially. We examined the risks and benefits of normalizing the hematocrit in patients with cardiac disease who were undergoing hemodialysis.

Methods: We studied 1233 patients with clinical evidence of congestive heart failure or ischemic heart disease who were undergoing hemodialysis: 618 patients were assigned to receive increasing doses of epoetin to achieve and maintain a hematocrit of 42 percent, and 615 were assigned to receive doses of epoetin sufficient to maintain a hematocrit of 30 percent throughout the study. The median duration of treatment was 14 months. The primary end point was the length of time to death or a first nonfatal myocardial infarction.

Results: After 29 months, there were 183 deaths and 19 first nonfatal myocardial infarctions among the patients in the normal-hematocrit group and 150 deaths and 14 nonfatal myocardial infarctions among those in the low-hematocrit group (risk ratio for the normal-hematocrit group as compared with the low-hematocrit group, 1.3; 95 percent confidence interval, 0.9 to 1.9). Although the difference in event-free survival between the two groups did not reach the prespecified statistical stopping boundary, the study was halted. The causes of death in the two groups were similar. The mortality rates decreased with increasing hematocrit values in both groups. The patients in the normal-hematocrit group had a decline in the adequacy of dialysis and received intravenous iron dextran more often than those in the low-hematocrit group. CONCLUSIONS: In patients with clinically evident congestive heart failure or ischemic heart disease who are receiving hemodialysis, administration of epoetin to raise their hematocrit to 42 percent is not recommended. **N Engl J Med 1998; 339:584-590**.

RELATION BETWEEN RED BLOOD CELL DISTRIBUTION WIDTH AND CARDIOVASCULAR EVENT RATE IN PEOPLE WITH CORONARY DISEASE

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Background: Higher levels of red blood cell distribution width (RDW) may be associated with adverse outcomes in patients with heart failure. We examined the association between RDW and the risk of all-cause mortality and adverse cardiovascular outcomes in a population of people with coronary disease who were free of heart failure at baseline. Methods and Results-We performed a post hoc analysis of data from the Cholesterol and Recurrent Events study. Baseline RDW was measured in 4111 participants who were randomized to receive pravastatin 40 mg daily or placebo and followed for a median of 59.7 months. We used Cox proportional hazards models to examine the association between RDW and adverse clinical outcomes. During nearly 60 months of follow-up, 376 participants died. A significant association was noted between baseline RDW level and the adjusted risk of all-cause mortality (hazard ratio per percent increase in RDW, 1.14; 95% confidence interval, 1.05 to 1.24). After categorization based on quartile of baseline RDW and further adjustment for hematocrit and other cardiovascular risk factors, a graded independent relation between RDW and death was observed (P for trend=0.001). For instance, participants with RDW in the highest quartile had an adjusted hazard ratio for death of 1.78 (95% confidence interval, 1.28 to 2.47) compared with those in the lowest quartile. Higher levels of RDW were also associated with increased risk of coronary death/nonfatal myocardial infarction, new symptomatic heart failure, and stroke. Conclusions-We found a graded independent relation between higher levels of RDW and the risk of death and cardiovascular events in people with prior myocardial infarction but no symptomatic heart failure at baseline. **Circulation. 2008; 117:163-168**