

# Lower Target Hemoglobin Has Advantages in CKD

*Although treating anemia improves quality of life, higher hemoglobin levels were linked to morbidity.*

BY SARAH PRESSMAN LOVINGER  
Contributing Writer

CHICAGO — Maintaining a lower hemoglobin level may help prevent morbidity and mortality in patients with chronic kidney disease, according to a study of 1,432 patients randomized to two different hemoglobin goals.

Almost half of patients with stage 3-5 chronic kidney disease (CKD) have anemia, and nephrologists know that treating anemia with erythropoietin and iron “improves quality of life, well-being, exercise tolerance, and lowers the risk of transfusions,” said Dr. Ajay Singh, who presented late-breaking results of the Correction of Hemoglobin and Outcomes in Renal Insufficiency (CHOIR) study at a meeting on clinical nephrology sponsored

by the National Kidney Foundation.

A deficiency of erythropoietin, which is produced by the kidneys, is known to contribute to anemia. Iron deficiency also plays a role, noted Dr. Singh, director of the dialysis unit at Brigham and Women’s Hospital, Boston.

But researchers have not yet elucidated the optimal target hemoglobin level for CKD patients. Dr. Singh and his associates conducted a randomized, controlled trial of 1,432 patients with CKD. The patients were randomized to one of two groups, with a target hemoglobin of either 13.5 g/dL or 11.3 g/dL. The groups had

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similar baseline characteristics: About half of those in each group had diabetes, and about one-third had hypertension.

Patients were followed weekly, for a median of 16 months, to assess how many in each group reached a primary composite end point of death, MI, stroke, or severe heart failure requiring hospital admission. Patients in both groups received an average dose of 8,000 U of erythropoietin subcutaneously every week. To achieve the hemoglobin levels specified in the trial, some patients were switched to every-other-week dosing.

Patients also received iron supplementation, as indicated, according to the standard of care.

The patients randomized to the lower hemoglobin level were significantly less

likely to reach the primary composite end point, compared with those randomized to the higher hemoglobin level.

Further analysis of the data showed that death and heart failure were driving the composite end point, rather than an increased incidence of stroke or MI. No difference was seen between the groups in reaching the secondary composite end point: all-cause mortality, change in hemoglobin level or hematocrit, or development of heart failure.

The physiologic mechanisms underlying the findings have not yet been worked out. “The biologic mechanisms are unclear,” Dr. Singh said in an interview.

It is not yet known whether the poorer outcomes seen in the high-hemoglobin group were the result of the higher level of hemoglobin itself, the use of erythropoietin to achieve this higher hemoglobin level, or other factors. “It seems to be a phenomenon related to kidney disease,” he added. ■

## White Patients More Likely To Receive Kidney Transplant

BY SARAH PRESSMAN LOVINGER  
Contributing Writer

CHICAGO — As the demand for kidney transplants for patients with end-stage renal disease continues to increase, disparities in transplantation rates among U.S. minority populations continue.

Dr. Robert S. Gaston, a nephrologist whose transplant team at the University of Alabama, Birmingham, has performed more than 7,000 kidney transplants, said that thousands of people have asked him when they can have a transplant.

Most patients would prefer having a kidney transplant to remaining on dialysis.

“Patients will tell us a lot about therapeutic modalities if we’ll listen to them,” Dr. Gaston said at a meeting on clinical nephrology sponsored by the National Kidney Foundation.

The prevalence of end-stage renal disease (ESRD) is four to five times greater in blacks than in whites, yet black and other minority patients do not undergo nearly as many transplants as white patients do. “White patients are 50% more likely to receive a transplant within 2 years of being wait-listed,” compared with other racial groups, Dr. Gaston said.

He cited 2002 data on ESRD prevalence that further underscore the disparities. At that time, more than 80% of the African American population with ESRD was on dialysis, while less than 20% had undergone a kidney transplant. At the same time, only 62% of the comparable white population was on dialysis, while 38% had received a kidney transplant.

All patients who might need a kidney transplant go through a process that involves a referral to a transplant center and a medical evaluation, Dr. Gaston explained. Patients who are approved after the evaluation are then placed on a waiting list. But the process

goes more smoothly for some patients than others. “At each step along the pathway, the evaluation process can be challenging,” he said.

Dr. Gaston provided details on many of the barriers to transplantation that minority patients face.

First, fewer African American patients than white patients learn about the transplantation option.

In addition, the high cost of a transplant is also an important factor, and patients with higher-paying private insurance are much more likely to get a transplant than patients who have only Medicare.

Also, those ESRD patients who have been placed on multiple transplant lists have an increased likelihood of ultimately receiving a transplant. But African American patients are 70% less likely to be on multiple waiting lists.

Possibly the biggest obstacle to receiving a transplant is that minority patients have less access to living donors than white patients do. Dr. Gaston cited a study done at his institution that revealed that while 33% of white patients received a kidney from a living donor, only 13% of African American patients were able to undergo this type of transplant.

Ultimately, patients who receive a transplanted kidney from a living donor have the best outcomes. Studies show that the greatest survival benefit occurs in ESRD patients who receive a living donor transplant before starting dialysis.

Under the new organ allocation system, Dr. Gaston noted, transplant access for minorities has increased and overall outcomes have also improved.

Data show a 10.3% increase in renal transplants in black patients since the rules have changed by relaxing HLA matching requirements, said Friedrich K. Port, president of University Renal Research and Education Association in Ann Arbor, Mich. ■

## Looser Criteria Could Bump Up Kidney Transplant Rate

BY JEFF EVANS  
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Accepting living kidney donors with mild hypertension or proteinuria would increase the transplantation rate by only 3%, according to a review of cases from four transplant centers.

But increasing live donor awareness and overcoming immunologic barriers may more successfully mitigate the effects of donor organ shortage in patients who need kidney transplants, Dr. Martin Karpinski of the University of Manitoba, Winnipeg, and his associates wrote (Am. J. Kidney Dis. 2006;47:317-23).

Yet even a 3% increase indicates that the glass is “half full” rather than “half empty,” because transplants increase longevity and improve quality of life, Dr. Arthur J. Matas of the University of Minnesota, Minneapolis, wrote in an editorial (Am. J. Kidney Dis. 2006;47:353-5).

In the study of 352 wait-listed patients with end-stage renal disease, 31 potential living kidney donors were turned down because of hypertension or proteinuria. The researchers identified 12 (3%) donors with acceptable levels of hypertension (untreated blood pressure between 140/90 mm Hg and 150/100 mm Hg or treated with a single antihypertensive medication to less than 140/90 mm Hg) or proteinuria (protein 0.15-0.30 g/day).

Only 124 (35%) of the 352 patients

on the wait list had at least 1 potential living donor evaluated. Overall, 180 potential donors for these 124 patients were evaluated and excluded. Positive crossmatch and blood group type incompatibility accounted for 55% of the donor exclusions.

Efforts to make greater use of living donors need not be mutually exclusive, because each of the potential ways of addressing the problem has its own set of issues, Dr. Matas wrote.

“There is no reason why transplant centers could not simultaneously work to increase living donor rates, overcome immunologic barriers, and accept living donors with mild hypertension,” he said.

The long-term effects of these types of kidney transplants are not yet known, nor is it clear whether recipients fare better by continuing with dialysis until a deceased donor kidney is available, Dr. Matas and Dr. Karpinski and his colleagues noted.

A study of 24 white living kidney donors with essential hypertension found no adverse effects of the donation on blood pressure after a mean of 282 days of follow-up (Transplantation 2004;78:276-82). Longer follow-up will be necessary to accept such living donors, Dr. Matas wrote.

Any centers that want to take on these challenges must have systems in place for adequate evaluation, counseling, education, and long-term follow-up of prospective living donors and recipients, he added. ■

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