

From: National Anemia Action Council [info@anemia.org]

Sent: Tuesday, May 19, 2009 11:41 AM

To: michael@anellomedicalwriting.com

Subject: Teaching Women About Anemia

ANEMIA ALERT



The monthly e-newsletter for medical professionals from the National Anemia Action Council.

May 2009

Volume 7, Issue 5

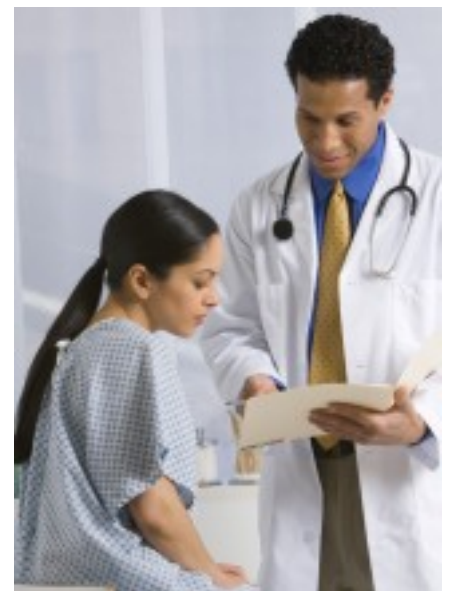
Anemia Alert is NAAC's monthly e-newsletter for medical professionals. Each issue contains anemia news, expert commentary, feature articles and other recently updated content from www.anemia.org.

Teaching Women About Anemia

When it comes to their health, women need all the help they can get – especially from their doctor. According to a recent poll women are not seeking medical advice as often due to health care costs, even though more than 40% of the 754 adult women polled said their health had declined in the past year.

We know time with your patients is precious, that's why this month's feature "Teaching Women about Anemia" breaks down the basics for discussing anemia with your female patients. You can rely on NAAC to make anemia education easier.

[Teaching Women How to Recognize and Manage Anemia](#)



Anemia is one of many important lifelong health considerations for women as well as an important U.S. public health issue. NAAC encourages physicians and healthcare professionals to actively educate their female patients who may be at risk for developing anemia. Especially consider women who may:

- Have An Existing Chronic Illness
- Have Heavy Menstrual Bleeding or Fibroids
- Be Pregnant
- Have Given Birth Recently
- Be Over the Age of 65

[Read Full Article](#)

[Read Past Feature Articles »](#)

Anemia in the News

Meta-analysis Research Cautions Use of Anemia Drug for Cancer Patients

A recent article published in *The Lancet* concluded that the use of erythropoiesis-stimulating agents (ESAs) increased mortality and worsened overall survival for treatment of cancer patients with anemia. The results showed that patients who received ESAs in addition to transfusions experienced a 17% higher mortality rate during the active study period and a 6% lower overall survival rate than patients only receiving transfusions. For the subset of patients in this study undergoing chemotherapy (10,441 patients in 38 trials) mortality was 10% higher and overall survival was lower by 4%, although not reaching statistical significance. [Read Full News Item](#)



[More Anemia in the News »](#)

Ask the NAAC Experts

Measuring Fructosamine and HbA1c Levels in Presence of Anemia

Question:

A diabetic educator suggested to check fructosamine levels instead of HbA1c levels on our diabetic dialysis patients. I'm aware that anemia can affect the results of HbA1c levels, but what advice can you provide regarding this practice?

NAAC Expert Answer:

Measuring fructosamine levels is not the best approach because the margins are very wide and the correlation is not great, even in healthy patients. Dialysis patients also have alterations in plasma proteins, so this does not seem like a viable option. The best approach is to encourage patients to test their blood glucose and download values from their meters, making certain that the meters have the correct date and time. Management of diabetes can be done this way without ever checking HbA1c levels.

Dialysis patients who lose a bit of blood during dialysis, often receive an erythropoiesis-stimulating agent (ESA) to stimulate red blood cell (RBC) formation, and may suffer from other conditions that either cause anemia or more rapid RBC turnover. Anemia, transfusions, or other problems associated with rapid turnover of red blood cells will shorten the time that glucose interacts with the cells, thereby lowering the HbA1c reading relative to the actual mean level of blood glucose. HbA1c will be lowered, but the exact percent is not clear. Clinically, it may be 0.5% lower than expected, but this is difficult to extract from the literature.



[Submit Your Questions](#) OR [Read More Q&A's](#) »

Research Reviews of Recent Clinical Trials

Reducing Fatigue in Female Blood Donors with Iron Supplementation

Non-anemic women often experience fatigue after blood donation, and it is posited that iron-deficiency may play a role. In fact, 66-97% of stored iron in a menstruating woman is lost after a whole-blood donation. There is evidence to suggest that iron supplementation after donation can decrease the incidence of iron-deficiency in these donors. But to date, no studies have examined the effect of iron supplementation in this patient population. Therefore, a recent study was designed to assess donor symptoms such as fatigue, aerobic capacity, and quality of life.

This study's primary objective is to assess whether a 1-month iron supplementation of oral ferrous sulphate has positive effects on the adverse symptoms female donors often experience. Approximately 450 ml of venous blood will be collected from female donors aged 18-50 years, and those with ferritin levels ≤ 30 ng/mL and hemoglobin (Hb) concentration of ≥ 120 g/L will be included in the study. The study will be a randomized, double-blind control trial, with half of the patients receiving 80 mg/day of oral ferrous sulfate, and the other half of patients receiving placebo for a 4-week period.

During the trial period, paramedical staff will collect data using a 10 cm visual analogue scale and self-administered questionnaires that focus on fatigue levels. These surveys will be given on the first and last days of the study period. In addition, patients will take questionnaires that focus on depression and anxiety, aerobic capacity, and health-related quality of life. Statistical analyses will then be conducted on an intention-to-treat basis, and will examine changes in fatigue levels.

Although the risk of adverse effects is low in this study, patients could potentially develop anemia after donation. In this case, patients will be automatically removed from the study and given a 3-month ferrous sulfate treatment under the care of their primary physician. The study's greatest strength is that it is the first trial to test the effect of iron supplementation on subjective symptoms between two donations. Other studies have only focused on return rates of donors and improving Hb levels. Therefore, if the original hypotheses are correct, the results will be very valuable to blood management strategies after donation, especially in menstruating women.

Pedrazzini B, Waldvogel S, Cornuz J, Vaucher P, Bize R, Tissot JD, Pecoud A, Favrat B. The impact of iron supplementation efficiency in female blood donors with a decreased ferritin level and no anaemia. Rationale and design of a randomised controlled trial: a study protocol. Trials. 2009 Jan 16;10:4.

NAAC Expert Commentary:

During volunteer blood donation at a community blood center, 450-500 ml of whole blood is removed from the donor.¹ This donated blood contains 200-250 mg of iron, an amount that represents about 25% of the average iron stores in men, and almost 100% of the iron stores in women who have lower iron stores than men due to menstrual blood loss. Thus, many individuals who donate blood two to four times per year become iron deficient.²

Iron deficiency, even in the absence of anemia, has been shown to have multiple detrimental side effects. These range from decreased energy and exercise tolerance to pica and restless leg syndrome.³ In addition, several studies performed in both adolescent and adult women have shown that iron deficiency results in decreased cognitive performance over a broad range of tasks.^{4,5} Approximately 10% of the United States' blood supply is collected at high school blood drives.⁶ The potential adverse effects of iron deficiency secondary to blood donation are particularly concerning in light of the recent changes in the law of over 30 states allowing blood donation by 16 year-

olds with parental consent. Since blood drives are often held twice per year at an individual school, this change in the law could result in adolescents that have donated 4-6 times before they graduate from high school, many of whom will develop iron deficiency from donating blood.

The impact of blood donation on donor iron stores has been well recognized for over 30 years² and studies have shown that iron deficiency can be prevented by providing iron supplements to blood donors.^{7,8} Despite the studies demonstrating its efficacy, iron supplementation of donors has not been widely implemented by blood centers. This is due to concerns about providing iron to individuals with undiagnosed hemochromatosis and potentially masking anemia due to occult blood loss from the gastrointestinal tract thereby delaying the diagnosis of a gastrointestinal disease.⁹ Also, there is a general reluctance among blood centers to provide therapy to donors, preferring to refer donors to their personal physicians for care.

It is within this context that Pedrazzini et al have designed this iron supplementation trial. The primary goal of the study is to determine whether iron supplementation for one month following blood donation will reduce symptoms of fatigue in female donors with iron deficiency and no anemia. The investigators will also assess whether the iron therapy increases aerobic capacity and enhances mood and quality of life.

This is the first study designed to test the effect of iron supplementation on fatigue and other quality of life factors in blood donors. It is a well designed, double blinded, placebo-controlled study that will likely produce important new data about how iron deficiency affects the day-to-day life of blood donors and whether iron supplementation can prevent adverse symptoms. One potential problem is that the investigators have chosen to supplement with iron sulfate, which produces gastrointestinal side effects in about 20% of users. Thus, a high level of non-compliance with therapy may be expected in the treatment arm of the study. Other formulations of iron such as ferrous gluconate produce fewer side effects. Nevertheless, it is anticipated that the results of this study, scheduled for publication in the summer of 2010, will provide additional data supporting the practice of providing iron supplementation to regular blood donors.

References

1. *Simon TL. Iron, iron everywhere but not enough to donate. Transfusion. 2002 Jun;42(6):664..*
2. *Finch CA, Cook JD, Labbe RF, Culala M. Effect of blood donation on iron stores as evaluated by serum ferritin. Blood. 1977 Sep;50(3):441-47.*
3. *Newman B. Iron depletion by whole-blood donation harms menstruating females: the current whole-blood-collection paradigm needs to be changed. Transfusion. 2006 Oct;46(10):1667-81.*
4. *Murray-Kolb LE, Beard JL. Iron treatment normalizes cognitive functioning in young women. Am J Clin Nutr. 2007 Mar;85(3):778-87.*
5. *Bruner AB, Joffe A, Duggan AK, Casella JF, Brandt J. Randomised study of*

- cognitive effects of iron supplementation in non-anaemic iron-deficient adolescent girls. Lancet. 1996 Oct 12;348(9033):992-96.*
6. *Eder AF, Hillyer CD, Dy BA, Notari EP 4th, Benjamin RJ. Adverse reactions to allogeneic whole blood donation by 16- and 17-year-olds. JAMA. 2008 May 21;299 (19):2279-86.*
 7. *Simon TL, Hunt WC, Garry PJ. Iron supplementation for menstruating female blood donors. Transfusion. 1984 Nov-Dec;24(6):469-72.*
 8. *Gordeuk VR, Brittenham GM, Bravo J, Hughes MA, Keating LJ. Prevention of iron deficiency with carbonyl iron in female blood donors. Transfusion. 1990 Mar-Apr;30 (3):239-45.*
 9. *Brittenham GM, Klein HG, Kushner JP, Ajioka RS. Preserving the national blood supply. Hematology Am Soc Hematol Educ Program. 2001:422-32.*

Administering Erythropoietin Beta to Stabilize Hemoglobin Targets

Recombinant human erythropoietin (epoetin) has been shown to be an effective and well-tolerated treatment for patients with anemia, and helps them achieve recommended hemoglobin (Hb) levels (>11 g/dL). However, due to safety concerns related to higher Hb levels, the National Kidney Foundation/Kidney Disease Outcomes Quality Initiative recently recommended Hb target levels between 11 and 12 g/dL, a range which has been clinically difficult to achieve and maintain in many patients. Furthermore, subcutaneous (SC) epoetin alfa was recently associated with a marked increase in anemic patients who developed pure red cell aplasia (PRCA). These developments have led researchers to focus on epoetin beta as an alternative treatment, and therefore, the Gain effectiveness in Anemia treatment with NeoRecormon (GAIN) study was designed to examine the clinical benefits of switching from SC or intravenous epoetin alfa to SC epoetin beta.

The study population included 4,264 anemic patients aged 18 years or older who had been treated with any erythropoiesis-stimulating agent (ESA) for at least 12 weeks. After the initial treatment period, patients underwent an 18-month observational period in which they received treatment with SC epoetin beta. The study's primary objective was to assess the effectiveness of SC epoetin beta treatment in achieving Hb stability and to compare this management across a number of European countries. Overall, the number of patients within recommended Hb target levels maintained those levels with SC epoetin beta, even after switching from a different ESA. In fact, there was a slight increase in the number of patients who achieved target levels at months 7-12, as well as a slight decrease in the proportion of patients with an Hb level <10 g/dL. Furthermore, 97% of patients experienced good tolerability for SC epoetin beta, with no cases of PRCA reported.

These findings suggest that switching to SC epoetin beta is a safe and effective treatment method. This switch also resulted in a dose savings of 24%, and the once-weekly dosing schedule provided a low-cost alternative to more frequent dosing strategies. Importantly, slight variation in each country's results suggests that guideline adherence differs, and that existing country-specific factors will be key to developing

standard guidelines across the continent. Finally, since the study was open label and observational, more trials are needed to determine if other factors – such as concomitant iron therapy – contributed to the stability of target Hb levels.

Rath T, Mactier RA, Weinreich T, Scherhag AW; GAIN Investigators. Effectiveness and safety of recombinant human erythropoietin beta in maintaining common haemoglobin targets in routine clinical practice in Europe: the GAIN study. Curr Med Res Opin. 2009 Apr;25(4):961-70.

NAAC Expert Commentary:

The observational study by Rath et al, investigating the use of SC epoetin beta as an alternative to epoetin alfa for treatment of anemic patients on hemodialysis in Europe, provided further support for the use of SC epoetin beta in patients on hemodialysis and was well tolerated in CKD or patients on forms of Renal Replacement Therapy (RRT).

This study suggests hemodialysis patients on SC epoetin beta dosing maintained Hb values within target Hb range (10-12 g/dL) and varying not more than ± 1 g/dL during the 18-month observational period. Maintaining target range hemoglobin levels was achieved by using significantly lower doses of epoetin beta subcutaneously in comparison to IV dosing. This success was roughly comparable with ESA treatment effectiveness prior to the study. However, it is important to recognize the role concomitant iron therapy may have played in this study to contribute to the stability of target Hb levels. The use of epoetin beta in hemodialysis patients also merits considerable attention for practitioners in the United States where dosing schedules and cost effectiveness have become important considerations for anemia treatment with ESAs.

As also mentioned by the authors, differences in protocol among the participating countries introduces many variables which could have affected the results and which may play an important role in standardizing care within Europe.

[Read More Research Reviews »](#)

More Online Resources from NAAC

[NAAC Website](#) | [Order Materials](#) | [For Your Patients](#) | [Anemia Watch](#)

You have received Anemia Alert because you either subscribed to the newsletter or NAAC felt you may have an interest. Please follow the links below to manage your correspondence with NAAC.

Thank You for Subscribing | [Refer a Friend](#) | [Unsubscribe](#) | [Remove Me](#)

Anemia Alert Sponsors

The National Anemia Action Council's newsletter, Anemia Alert, is made possible in part, by the generous sponsorship from Ortho Biotech.



Copyright 2009 | National Anemia Action Council, Inc. | 555 E Wells St, Suite 1100, Milwaukee, WI 53202

The content of this newsletter was developed independently and without any input from the sponsors. No content of Anemia Alert shall be construed as an endorsement or recommendation of any product or service referenced therein or any manufacturer, distributor or other provider of such product or service. All of the content of Anemia Alert is the sole and exclusive property of the National Anemia Action Council ("NAAC") and is protected under the U.S. copyright law and other international treaties and conventions. None of said content may be copied, reproduced, distributed, displayed, posted or transmitted in any form or by any means without the prior written content of NAAC.

Anemia Alert and the content therein are for general informational and educational purposes and are not intended for use as the sole basis for medical judgments or decisions. NAAC DISCLAIMS ANY WARRANTY, EXPRESSED OR IMPLIED, REGARDING Anemia Alert, INCLUDING, WITHOUT LIMITATION, THE ACCURACY THEREOF, AND PROVIDES THEM SOLELY ON AN "AS IS" BASIS. UNDER NO CIRCUMSTANCES WILL NAAC BE RESPONSIBLE OR LIABLE FOR ANY DAMAGES OR LOSS THAT MAY RESULT FROM OR RELATE IN ANY MANNER TO ANY USE OF OR RELIANCE ON Anemia Alert OR THE CONTENT THEREOF OR ANY ERROR INACCURACY, OMISSION, OR DEFECT THEREIN.