

Tips for the Transfusionist Part 2– Checking Hemoglobin After Transfusion

How soon after a red cell transfusion can the hemoglobin be rechecked?

With the promotion of ordering single red cell unit transfusions and then reassessing the patient to determine if an additional unit is needed, a question often arises: “When is the best time to check the patient’s hemoglobin post-transfusion?”

Transfusion of one unit of red cells in a non-bleeding patient should increase the patient’s hemoglobin by 1 to 1.5g/dL or hematocrit by 3%. A common practice of some providers is to check the hemoglobin 4 to 8 hours after

completion of the transfusion, particularly in a patient with high risk for bleeding. Others use 24 hours or the next morning to evaluate the effectiveness of the transfusion, however, an earlier assessment may be just as valid.

Studies evaluating how quickly hemoglobin stabilized after transfusion in both recently bleeding and non-bleeding hospitalized patients found similar results. The authors determined that hemoglobin levels rapidly recover and measurements at 15 minutes after the end of the transfusion were equivalent to those drawn at longer intervals, including up to 24 hours.^{1,2}

Implications for practice:

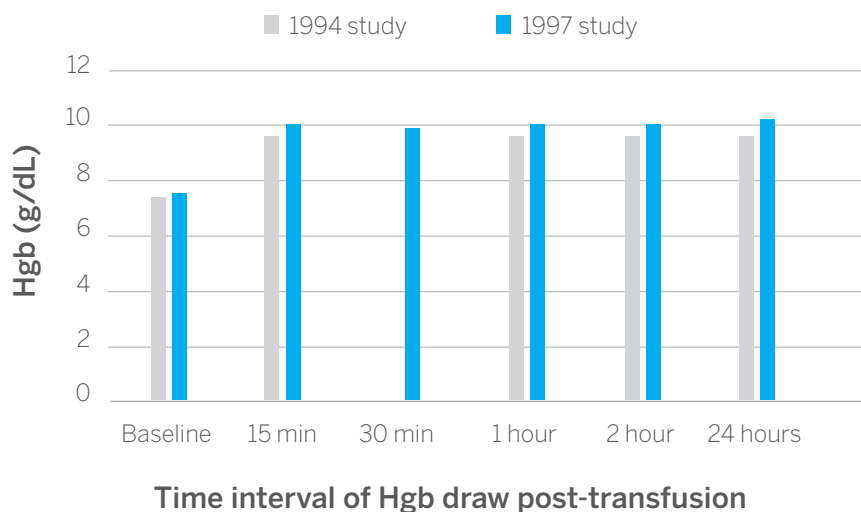
Hemoglobin (Hgb) levels can be rechecked as soon as 15 minutes after the completion of the RBC transfusion.

References:

1. Wiesen AR, et al. Equilibration of hemoglobin concentration after transfusion in medical inpatients not actively bleeding. *Annals Int Med* 1994;121(4):278-280.
2. Elizalde JI, et al. Early changes in hemoglobin and hematocrit levels after packed red cell transfusion in patients with acute anemia. *Transfusion* 1997;37:573-576.

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Mean Hgb values after transfusion of two (2) RBC units over pre-defined time intervals



In the **1994 study** by Wiesen et al¹, 39 patients had Hgb measured at 15 min, 1 hour, 2 hours, and 24 hours after the end of 2-unit RBC transfusion. No significant differences were noted in mean Hgb values among the defined post-transfusion times (P = 0.82).

In the **1997 study** by Elizalde et al², 32 patients who recently had an acute bleeding episode received a 2-unit RBC transfusion. The post-transfusion Hgb measurements performed at 15 min, 30 min, 1 hour, 2 hours and 24 hours showed no significant difference (P = 0.4).