Transfusion Events in Hemodialysis Patients by Hemoglobin Level, ESA Users vs. Non-ESA Users

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Introduction

- Anemia is a common condition among end-stage renal disease (ESRD) patients.
- Erythropoiesis stimulating agents (ESAs), iron, and red blood cell transfusions are the primary treatments to increase hemoglobin (Hb) levels.
- Assessing transfusion use and Hb levels had been possible only for ESA-treated ESRD patients due to Medicare reporting requirements.
- In 2012, CMS began requiring Hb levels to be reported for all dialysis patients regardless of ESA use.
- Hb levels from the prior month are reported on the current month’s dialysis claims.
- We assessed differences in monthly transfusion use in hemodialysis patients by prior month Hb level among ESA users vs. non-ESA users.

Methods

- Monthly cohorts, April-December 2012 (first complete reporting), were created from Medicare ESRD standard analysis files.
- Patients receiving hemodialysis as of the first day of the month were included and followed from that day until death, kidney transplant, loss to follow-up, or the last day of the month.
- ESA use and transfusion events were evaluated during the follow-up period.
- ESA use was assessed from Part A outpatient claims. Transfusions were assessed from Parts A and B claims. Hb levels were extracted from outpatient dialysis claims and were from the last measurement of the prior month.

Results

- There were 265,693 ESRD patients on hemodialysis with Medicare as their primary payer in April 2012. 85.3% (or 226,704) were ESA users during the month.
- In April 2012, for hemodialysis patients with Hb ≥13 g/dL, 2.84% of ESA users and 0.45% of non-ESA users received transfusions (Figure 1).
- For hemodialysis patients with Hb 12–<13 g/dL, 1.45% of ESA users and 0.85% of non-ESA users received transfusions (Figure 1).
- For hemodialysis patients with Hb 10–<11 g/dL and 11–<12 g/dL, transfusion use was 2.26% and 1.58% for ESA users and 2.93% and 1.22% for non-ESA users (Figure 1).
- Transfusion use was 5.41% and 16.03% for ESA users with Hb 9–10 g/dL and <9 g/dL; corresponding percentages were 16.10% and 27.60% for non-ESA users (Figure 1).

Similar patterns in monthly transfusion use were observed for the May-December 2012 cohorts (Figures 2 and 3).

Conclusions

- For hemodialysis patients with Hb 10–12 g/dL, transfusion use was similar between ESA users and non-ESA users.
- For hemodialysis patients with low Hb levels (<10 g/dL), transfusion risk was higher for non-ESA users than for ESA users in the next month.
- Longer-term assessment is needed to determine the sustained risk of transfusions when Hb falls below 10 g/dL.