Erythropoiesis Stimulating Agents (ESAs) for Treatment of Anemia in Adults with CKD Including Patients on Dialysis and Patients not on Dialysis: The Impact of ESA Use on Renal Transplant Graft Survival

CMS Office of Clinical Standards and Quality
Coverage and Analysis Group
Division of Items and Devices

CMS CENTERS for MEDICARE & MEDICAID SERVICES

Purpose of the Meeting

CMS has called this meeting of the panel to review the available evidence on the use of erythropoiesis stimulating agents (ESAs) for the treatment of anemia in adults with CKD including patients on dialysis and patients not on dialysis and more specifically the impact of ESA use on renal transplant graft survival.

Purpose of the Meeting

ESAs are used with the intention of reducing the need for red blood cell transfusion and thereby minimize immune sensitization as detected by panel reactive antibody (PRA) assays. PRA may be predictive of renal transplant graft survival. Some have proposed, therefore, that ESAs increase the survival of renal transplant grafts.

Voting Scale

- ***For the voting questions, use the following scale identifying level of confidence - with 1 representing the lowest or no confidence, 3 representing intermediate confidence and 5 representing a high level of confidence.***

1 Low Confidence	2	3 Intermediate Confidence	4	5 High Confidence

Questions To Answer

1. How confident are you that there is adequate evidence to determine whether or not current panel reactive antibody (PRA) assays predict renal transplant graft survival for individual patients (in contrast to populations)?

Questions To Answer

2. **If the result of Question 1 is at least intermediate (mean vote ≥ 2.5) how confident are you that current PRA assays predict renal transplant graft survival for individual patients?**

Discussion for Question 2

- How do PRA assays relate to more specific tests of HLA sensitivity and whether titer levels predict specific organ HLA sensitivity?
- Are the various proprietary PRA assays clinically interchangeable, i.e. would the treating physician's management of the patient differ depending on the specific assay?
- Do current PRA assays provide the same clinical information as older assays, i.e. do historical data on the performance of PRA assays apply to currently available assays?

Questions To Answer

3. **Donor-specific blood transfusions were frequently employed prior to renal transplantation for immune modulation and improved graft survival. These differ from therapeutic blood transfusions, which are performed for anemia/blood loss management.**

   How confident are you that there is adequate evidence whether or not therapeutic blood transfusions decrease renal transplant graft survival?

Questions To Answer

4. If the result of Question 3 is at least intermediate (mean vote ≥ 2.5) how confident are you that therapeutic blood transfusions decrease renal transplant graft survival?

Discussion for Question 4

- **The relative roles of sensitization as opposed to underlying co-morbid conditions in affecting renal transplant graft survival.**
- **The adequacy of the evidence base on the relationship if any between the number of units transfused and renal transplant graft survival. For example, is there a threshold number of units that predict renal transplant graft survival or is there a linear or exponential relationship between the number of units transfused that predict renal transplant graft survival?**

Discussion for Question 4 (cont'd)

- **The relative roles of blood transfusions, pregnancy, prior renal transplant, and other factors that cause sensitization.**

Questions To Answer

5. How confident are you that there is adequate evidence to determine whether or not ESA use for anemia/blood loss management improves renal transplant graft survival?

Questions To Answer

6. **If the result of Question 5 is at least intermediate (mean vote ≥ 2.5) how confident are you that there is adequate evidence to conclude that ESA use to maintain hemoglobin levels ≥10 g/dl is necessary to improve renal transplant graft survival?**

Questions To Answer

7. **What significant evidence gaps exist regarding the clinical criteria, including hemoglobin level, of patients who should receive blood transfusions for chronic anemia with the intent of improving renal transplant graft survival?**

Questions To Answer

8. **What significant gaps exist regarding the relationship, if any, of number of units transfused, screening PRA assays, more specific HLA assays, immune suppressive regimen, and the timing of rejection to determine the role various factors in transplant graft survival outcomes?**

Background

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