Effective Health Care
Induction Immunosuppressive Therapies In Renal Transplantation Nomination Summary Document

Results of Topic Selection Process & Next Steps

- Induction immunosuppressive therapies in renal transplantation was found to be addressed by a 2010 Cochrane review titled *Interleukin 2 receptor antagonists for kidney transplant recipients*, an in-process Cochrane review titled *Polyclonal and monoclonal antibodies for induction therapy in kidney transplant recipients*, and the 2010 Kidney Disease Improving Global Outcomes (KDIGO) clinical practice guideline for the Care of Kidney Transplant Recipients. Given that these products cover this nomination, no further activity will be undertaken on this topic.
  - Webster AC, Ruster LP, McGee R, Matheson SL, Higgins GY, Willis NS, Chapman JR, Craig JC. Interleukin 2 receptor antagonists for kidney transplant recipients. Cochrane Database of Systematic Reviews 2010, Issue 1. Art. No.: CD003897. DOI: 10.1002/14651858.CD003897.pub3. Available at: http://onlinelibrary.wiley.com/o/cochrane/clsysrev/articles/CD003897/frame.html
  - Webster AC, Chapman JR, Craig JC, Mahan JD, Orton LC, Pankhurst T, Webb N. Polyclonal and monoclonal antibodies for induction therapy in kidney transplant recipients (Protocol). Cochrane Database of Systematic Reviews 2004, Issue 2. Art. No.: CD004759. DOI: 10.1002/14651858.CD004759. Available at: http://onlinelibrary.wiley.com/o/cochrane/clsysrev/articles/CD004759/frame.html
  - Kasiske BL, Zeier MG, Chapman JR, Craig JC, Ekberg H, Garvey CA, Green MD, Jha V, Josephson MA, Kiberd BA, Kreis HA, McDonald RA, Newmann JM, Obrador GT, Vincenti FG, Cheung M, Earley A, Raman G, Abariga S, Wagner M, Balk EM; Kidney Disease: Improving Global Outcomes. KDIGO clinical practice guideline for the care of kidney transplant recipients: a summary. Kidney Int. 2010 Feb;77(4):299-311. Available at: http://www.kdigo.org/clinical_practice_guidelines/kdigo_guideline_for_care_ktr.php

Topic Description

Nominator: Organization

Nomination Summary: The nominator questions the comparative effectiveness of different immunosuppressive induction agents for patients receiving kidney transplant from deceased donors.

Staff-Generated PICO
Population(s): Adult patients undergoing kidney transplantation using a deceased donor kidney
Intervention(s): Induction immunosuppression
Comparator(s): Comparison of different induction immunosuppressive agents and combinations, monoclonal antibodies (muromonab-CD3, basiliximab, daclizumab,

alemtuxumab, rituximab), polyclonal antibodies (rabbit antithymocyte globulin, equine antitymyocyte globulin)
Outcome(s): Acute cellular rejection, delayed graft function, length of hospitalization, frequency of re-hospitalization, graft survival, patient survival, development of new cancers during the post-transplant period, infections (e.g., cytomegalovirus, Epstein-Barr virus, polyoma virus), development of new malignancies (e.g., post-transplant lymphoproliferative disorders, solid organ tumors, skin cancers)

Key Questions from Nominator:

1. For recipients of deceased donor kidney (SD, ECD, DCD) transplants, what is the comparative effectiveness of different induction agents (perioperative administration of intensive immunosuppression agents, also called immunoprophylaxis) to prevent the development of acute allograft rejection as well as delayed graft function?
2. What is the comparative effectiveness of three different types of induction agents that are used in recipients of kidney transplants: a) rabbit antithymocyte globulin (thymoglobulin), b) chimeric human-murine anti-CD 25 (basiliximab), and c) anti-CD52 antibody (alentuzumab)?

Considerations

- The topic meets EHC Program appropriateness and importance criteria. (For more information, see http://effectivehealthcare.ahrq.gov/index.cfm/submit-a-suggestion-for-research/how-are-research-topics-chosen/.)

- This topic was found to be addressed by three products:
  - An existing 2010 Cochrane review titled *Interleukin 2 receptor antagonists for kidney transplant recipients.* This systematic review examines the benefits and harms of monoclonal antibodies that specifically target IL2Ra in kidney transplant recipients, when they are added to a standard dual or triple therapy regimen or when compared to another induction agent or immunosuppressive strategy.
  - An in-process Cochrane review titled *Polyclonal and monoclonal antibodies for induction therapy in kidney transplant recipients.* The protocol for this review indicates that it will examine antibody preparations given in combination with any other immunosuppressive agents for induction therapy. Comparisons between different IL2Ra agents will be excluded, as they are the subject of the previous Cochrane review.
  - The 2010 Kidney Disease Improving Global Outcomes (KDIGO) clinical practice guideline for the Care of Kidney Transplant Recipients is a set of evidence-based guidelines that address the full spectrum of evidence regarding kidney transplantation, including a review of the evidence related to immunosuppressant therapy and the monitoring of these therapies. This review includes a chapter that specifically addresses the use of induction therapy.