Systems Based Practice in Kidney Transplantation

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BONUS CONFERENCE

MARCH 13, 2013
Systems Based Practice

- One of the 6 core competencies identified by the ACGME as a requirement to delivering safe and high quality patient care
- Residents must demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care
A reminder that we do not do it alone

- Dr. Shaffer can do the best kidney transplant, but how would that kidney do if he had to do everything else?

- He would have to:
  - Teach the patient about their medication, schedule follow-up, see pt at follow-up, follow-up labs, call and make immunosuppression adjustments, answer phone calls with questions, communicate data to UNOS, etc.

- While getting ready for the next one:
  - Screening referrals, scheduling pre-op testing, patient education, donor education and selection, social support screening, wait-list maintenance, etc.
“It takes a village...”

- The transplant center village over in Oxford House
- How many team members can we name?
  - Physicians
  - Nurses
  - NPs
  - Pharmacists
  - Social Workers
What about others we don’t always think of for kidney transplant?

- Transplant center director
- Financial advisors/counselors
- Clinic nurses, phone nurses
- Data manager specialists – scheduling
- Wait-list managers
- Donor coordinators and donor staff
- Infectious diseases
- Psychiatrists
Kidney Transplant Official List

- Kidney/Pancreas Directors: David Shaffer, M.D. - Surgical Director J. Harold Helderman, M.D. - Adult Medical Director Kathy Jabs, M.D. - Pediatric Medical Director
- Transplant Surgeons: Sunil Geevarghese, M.D. Douglas Hale, M.D. Seth J. Karp, M.D. Derek E. Moore, MD. M.P.H. David Shaffer, M.D. J. Kelly Wright, M.D.
- Transplant Nephrologists: Kelly Birdwell, M.D. J. Harold Helderman, M.D. Kathy Jabs, M.D. Anthony Langone, M.D. Heidi Schaefer, M.D.
- Transplant Infectious Diseases: Stephen Dummer, M.D.
- Transplant Nephrology Fellow Katherine Oshel, M.D. Graham Towns, M.D.
- Transplant Pharmacist Jennifer N. Fosnot, PharmD
- Transplant Psychiatry Karen Starr, MSN, RN, PMHNP-BC
- Data Managers: Erik Rumbaugh Michael Via
- Transplant Coordinators: Margot Chaffin, RN, BSN Beatrice Edmundson, RN, MSN, CFNP (VA) Joyce Eller, RN Jeanne Hopkins, RN Joann Johnson, RN, MSN, CFNP (VA) Tommy Johnson, APRN-BC (VA) Verna Johnson, RN (Living Donor) Amanda Lyles, RN, BSN Deborah Mangrum, RN. CNN Deonna Moore, MSN, ACNP-BC Jonna Olson, RN (Pediatric Coordinator) Sarah Wu, APN-BC
- Independant Donor Advocate Dan Ramage, LCSW
- Transplant Financial Counselors: Renee Allison Lisa Conyer Beth Goodrich Lori Russell
- Transplant Administrative Staff: Beverly Brown Arnette Edwards Darlene Hendrix Dasha Johnson (Office Supervisor) Alisha Layne Nancy Neal (VA) Andrea Pitts Christine Posen Lorraine Torres
Pre-Listing Process

Referral from Nephrologist

- Phone calls
- DMS

Initial Screening

- DMS
- RN

Evaluation Day

- DMS
- RNs
- MDs
- Social Work
- Clinic
- Xray
- EKG
- Lab
- Donors

Further Studies

- RN
- OSH

Listing

- RN
- MD
- SW
- Finance
Post-Transplant Process

Discharge from Hospital
- NP
- MD
- Pharmacist
- SW
- Floor RN

Follow-up Clinic, Labs
- NP
- ± MD

Complications
- NP
- Surgery < 3 m
- Nephrology > 3 m

Maintenance
- NP
- OSH
- Nephrology
- Pharmacy

Vanderbilt Transplant Center
Health Literacy Background

- Health literacy
  - “the degree to which individuals can obtain, process, understand, and communicate about health-related information needed to make informed health decisions”
  - An estimated 36% of Americans have low health literacy

(Healthy People 2010, 2nd ed. US Department of HHS; Berkman 2010; Kudner 2006)
Limited Health Literacy

- Associated with:
  - Lower socioeconomic status and minority race
  - Not having health insurance
  - Higher healthcare costs and spending
  - Worse clinical outcomes including all cause mortality

(Wallace 2008; Wolf 2005; Kripalani 2006; Berkman 2011)
Importance of Health Literacy

- Possible mediator for healthcare disparities in transplant
  - Listing for transplant
  - Post-transplant outcomes
  - Likelihood of having a living donor
- Addressing limited health literacy may improve disparities in outcomes for this population
Literacy in Kidney Disease

- Patients with end stage renal disease
  - 1/3 limited health literacy
  - Limited health literacy associated with:
    - Increased risk of death
    - Decreased risk of referral for transplantation

- Kidney transplant recipients
  - 9% limited health literacy
  - Limited health literacy associated with higher creatinine levels

Kidney Donors and Recipients

- Study Questions
  - What is the health literacy of living kidney donors?
  - What is the relationship of the health literacy of patients who receive a living donor kidney transplant to those who receive a deceased donor kidney transplant?
Kidney Donors and Recipients

- **Methods**
  - Retrospective review
  - Patients undergoing kidney donation or transplantation September 2010 - July 2012
  - Demographic data (race, age, educational attainment)
  - Health Literacy (Short Literacy Scale)
    - 3 brief screening questions at the time of admission
    - range 3-15
    - classified as high=15, moderate=9-14, low<=8
  - Chi-squared and logistic regression models

(Dageforde LA, Petersen A, Harms K, Feurer ID, Ehrenfeld JM, Cavanaugh KL, Moore DE)
Cohort included 360 adults

- 105 living donors (LD), 103 living donor recipients (LDR), 152 deceased donor recipients (DDR)

- Demographics:
  - 46±14 years old
  - 70% white
  - 56% male
  - 14±3 total years of education
Health Literacy by Patient Group

Chi-Square p=0.019

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### Logistic Regression Model

- Controlling for age, race, and education, DDR more likely to have moderate or low health literacy than LD.
- No difference between the LDR and LD groups.

<table>
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<th>Variables</th>
<th>$\beta$</th>
<th>OR</th>
<th>95% CI</th>
<th>p-value</th>
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<tr>
<td>Age (years)</td>
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<td>1.01</td>
<td>0.99, 1.02</td>
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<tr>
<td><strong>Education</strong> (total years)</td>
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<td><strong>0.75</strong></td>
<td><strong>0.68, 0.83</strong></td>
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<td>LDR (ref=LD)</td>
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<td>1.05</td>
<td>0.57, 1.92</td>
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<td><strong>DDR</strong> (ref=LD)</td>
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<td><strong>1.95</strong></td>
<td><strong>1.08, 3.53</strong></td>
<td><strong>0.028</strong></td>
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Conclusions

- Screening candidates for reduced health literacy might identify those with greater difficulty finding a living donor
- Opportunities for future interventions for those with lower health literacy and other related demographic characteristics may increase living donation
Future Directions

- Long term clinical outcomes of limited health literacy recipients
- Interview patients referred who no-show or cancel evaluation appointment
- Relationship between health literacy of patient and support person to success in finding a living donor
- Interventions to improve accessibility to transplant for patients and donors with limited health literacy and related demographic characteristics
Questions??