



Carolinan HealthCare System

ANNA NC STATEWIDE SYMPOSIUM

May 23, 2017

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CMC Transplant Center

Talking Points

- Transplant History/ CMC program
- UNOS/ Life Share, Types of donors
- Importance of donation
- Risks and Benefits
- Potential Long-term complications

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2



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History of Kidney Transplantation

- Experiments were done in the early 1900's using animal kidneys to transplant into humans.
- **1933**- The first human-to-human kidney transplant was performed, but not successful.
- **1950**- The first deceased donor kidney transplant in the U.S. was performed. It rejected 10 months later because there was no immunosuppressive therapy available at the time.
- **1954**- The first successful living donor kidney transplant was performed at Brigham Hospital in Boston between identical twins without the use of immunosuppression.

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3

Continued....

- **1960's**- Tissue typing advancements: Better techniques for matching donor and recipient blood and tissue types were developed.
- **1961**- Powerful immunosuppression became available and helped decrease the chance for kidney rejection.
- **1980's to Present**- New surgical techniques, new medicines, and new patient information have helped make kidney transplants a safer and more routine procedure.

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4

The Transplant Center at Carolinas Medical Center

- We are certified by **CMS** (Centers for Medicare/Medicaid) and **UNOS** (United Network for Organ Sharing) to transplant kidney, pancreas, liver, and hearts.
- We are ranked amongst the 50 busiest kidney transplant centers in the nation.
- Paired donor exchange program where a potential "pair" who is incompatible can "swap" with another willing "pair."
- The Transplant Center is one of seven in the United States with its own hospital-based organ procurement organization, [LifeShare of the Carolinas](#), which has resulted in lower waiting times for our patients.

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Continued...

- The first adult kidney transplant performed at CMC-1970.
- The first pediatric kidney transplant performed at CMC- 1976.
- The first kidney/pancreas transplant performed at CMC-1994.
- The first living donor kidney transplant performed at CMC-1971 (open nephrectomy).
- The first laparoscopic living donor transplant performed at CMC-2000.
- The first liver transplant performed at CMC was in 1994.
- The first heart transplant performed at CMC was in 1986.
- **Over 3,000 adult and pediatric kidney transplants have been performed at CMC.**

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Common Disease Processes That We See in Patients being Evaluated for Transplant:

- Diabetes Mellitus-Type 1 and 2
- Hypertension
- FSGS-(Focal Segmental Glomerulosclerosis)
- Systemic Lupus Erythema
- IGA nephropathy
- PCKD-(Polycystic kidney disease)
- Congenital abnormalities such as solitary kidney and renal dysplasia.

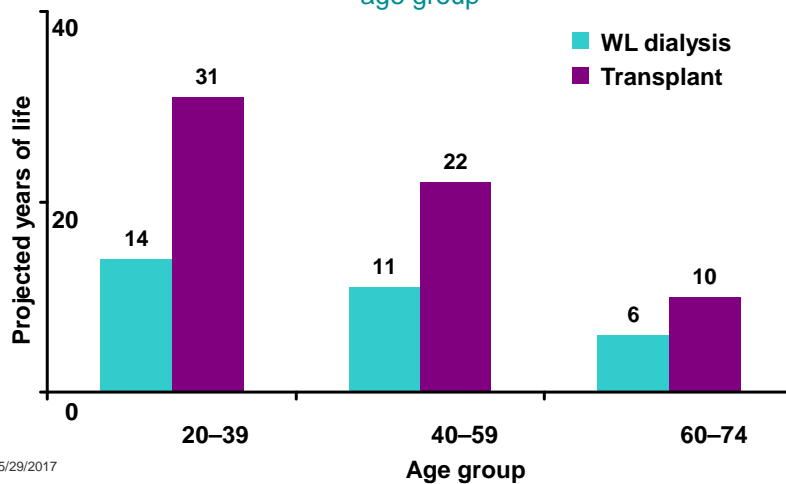
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7



Kidney Transplant is Life Saving

Projected years of life from WL by age group

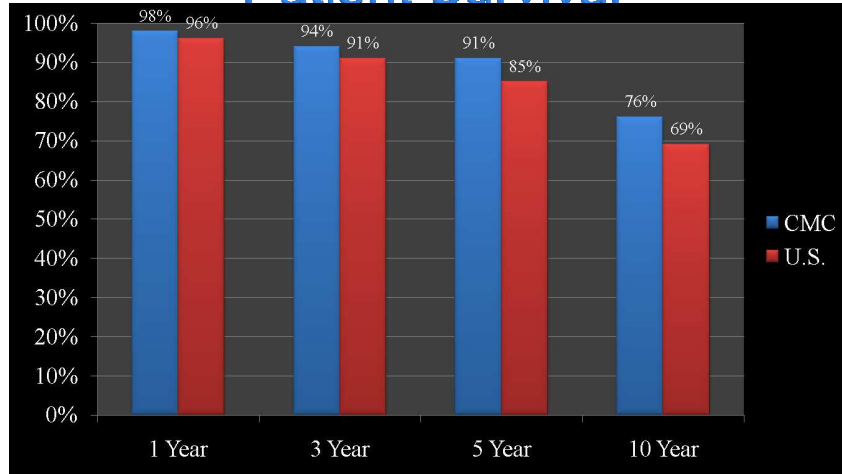


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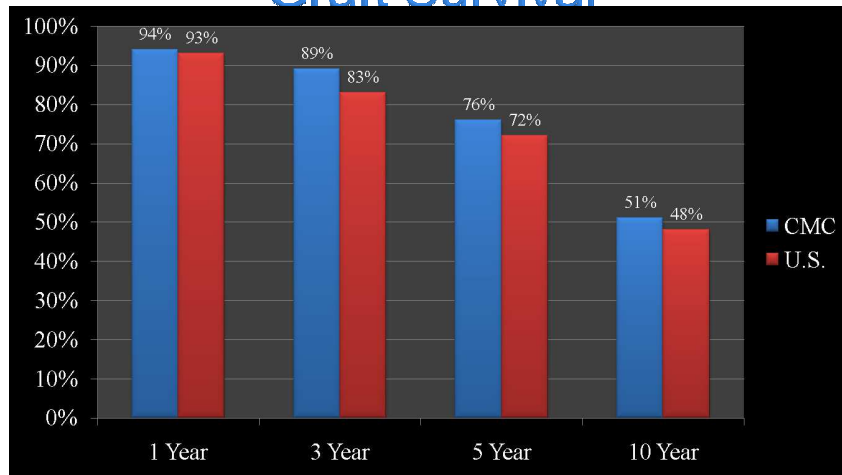
Transplant Outcomes: Patient Survival



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9

Transplant Outcomes: Graft Survival



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10

Getting Started

- Referral to Transplant Center (s)
- Insurance approval
- Education Class
- Meeting with the team & testing



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Common Questions from Patients

- Am I a candidate?
- Where should I get listed?
- What testing do I have to do?
- What type of donor will I have?
- What is surgery and recovery like?
- What is life after transplant like?
- How do I pay for all of this?



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12

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How Medicare Pays for Kidney Transplant

Medicare Part A	Medicare Part B	Medicare Part D
Covers your hospital stay ONLY	Covers physicians charges (surgeon, nephrologist, urologist, radiologist, cardiologist, etc.) and anti-rejection medications. Covered at 80%.	Covers other medications prescribed by physicians
Patient responsibility: Part A deductible, renewable every 60 days.	Patient responsibility: Part B annual deductible, 20% coinsurance.	Patient responsibility: Part D copay (determined by your part D carrier).

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13

United Network of Organ Sharing (UNOS)

- Non-profit and charitable organization
- National transplant database used to match recipients and donors
- Monitors transplant centers compliance
- Maintains transplant policies
 - Multiple listing
 - Wait time transfer
 - Organ distribution
- **UNET**- The secure internet-based transplant information database created by UNOS for the nation's organ transplant centers and OPOs to register patients for transplants, match donated organs to candidates, and manage critical data of all patients.

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14

Current UNOS Waiting List as of May 15, 2017

- 117,990 Patients waiting for organs
 - 97,710 for Kidneys
 - 1,696 for Kidney/Pancreas
 - 927 for Pancreas alone
 - 14,430 for Liver
 - 268 for Intestine
 - 3,962 for Heart
 - 1,411 for Lung
 - 40 for Heart/Lung

****Nationally, there have been 11,061 transplants performed from January 1, 2017- April 30, 2017. 9,200 were from deceased donors and 1,861 from living donors.**

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15

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Organ Procurement Organizations (OPO)

- In charge of deceased donor management
- There are 58 OPOs in the United States
- North Carolina has 2 OPOs
 - Life Share Of The Carolinas
 - Carolinas Medical Center
 - Carolina Donor Services
 - Duke
 - UNC-Chapel Hill
 - NC Baptist
 - Vidant (ECU)



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16

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LifeShare of the Carolinas

- A not-for-profit organ procurement organization designated by the federal government to serve 40 hospitals in a 22 county area of southwestern North Carolina.
- Based in Charlotte with a satellite office in Asheville.
- Works to improve the quality of human life by providing organs and tissues for transplantation and helping hospitals and their communities through educational and support services.
- You can register your donation decision at www.donatelifenc.org By signing up on the North Carolina donor registry, your decision is legally binding and can be enforced when others aren't available to honor your wishes.
- **Did you know that 1 donor can save or improve the lives of as many as 75 people through organ and tissue donation?**

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17

Types of Donors

- **Deceased donors- Brain death or DCD (donation after cardiac death)**
 - Standard
 - Expanded Criteria (ECD, CDC High Risk, Hep B core)
- **Living Related**
- **Living Unrelated**
 - Spouse
 - Friend
 - Good Samaritan or Anonymous
 - Paired Donor Exchange

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18

Criteria for Potential Deceased Organ Donors

- Only about **1-2%** of people are suitable to be potential organ donors
- Must be declared brain-dead and maintained on a ventilator or a decision made to withdraw ventilator support
- Determination for suitability is on a case by case basis

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19

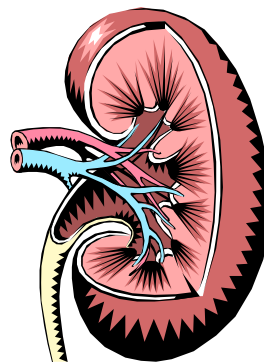
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How are Kidneys Matched?

- Blood type (O, A, B, AB)
- HLA (genetics)
- Waiting Time
- Medical Urgency
- Antibody Level
- Geographic areas/Availability



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20

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Inhibiting Factors to Transplantation

- Lack of advanced supportive care
- Patient's lack of knowledge regarding transplantation
- Supply vs. Demand (not enough organs for the number of people on the waiting list)
- Religious beliefs
- Cost

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Contraindications to Transplant

- Untreated or active cancer
- Non-adherence or patient refusal
- Active substance abuse if diabetic, known heart disease, or lung disease
- Marked deconditioning- poor functional status
- Social instability (poor family support, limited resources to maintain ongoing follow up)
- Morbid obesity
- Progressive dementia
- Severe peripheral vascular disease
- Severe chronic lung disease
- Advanced heart failure or liver disease (unless candidate for heart or liver transplant, as well)
- Advanced cardiovascular disease
- Pre-transplant Hgb <12 in patients that refuse blood products
- Severe malnutrition
- Chronic and/or active infection

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22

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Advantages of successful transplantation may include:

- Freedom from dialysis
- Increased strength
- Fewer dietary/fluid restrictions
- Improved blood counts
- Improved quality of life
- Potential to return to work or school without disability

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23

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Disadvantages

- Unfortunately, there are no guarantees in transplantation.
- Need to take anti-rejection medications for the life of the kidney. These medications have potential for significant adverse effects.
- Anti-rejection medications are very expensive.
- Weakened immune system
- Stress/Anxiety
- Pain/discomfort after surgery
- Frequent follow-up with Transplant Physician, as often as 2-3 times a week following discharge from hospital.

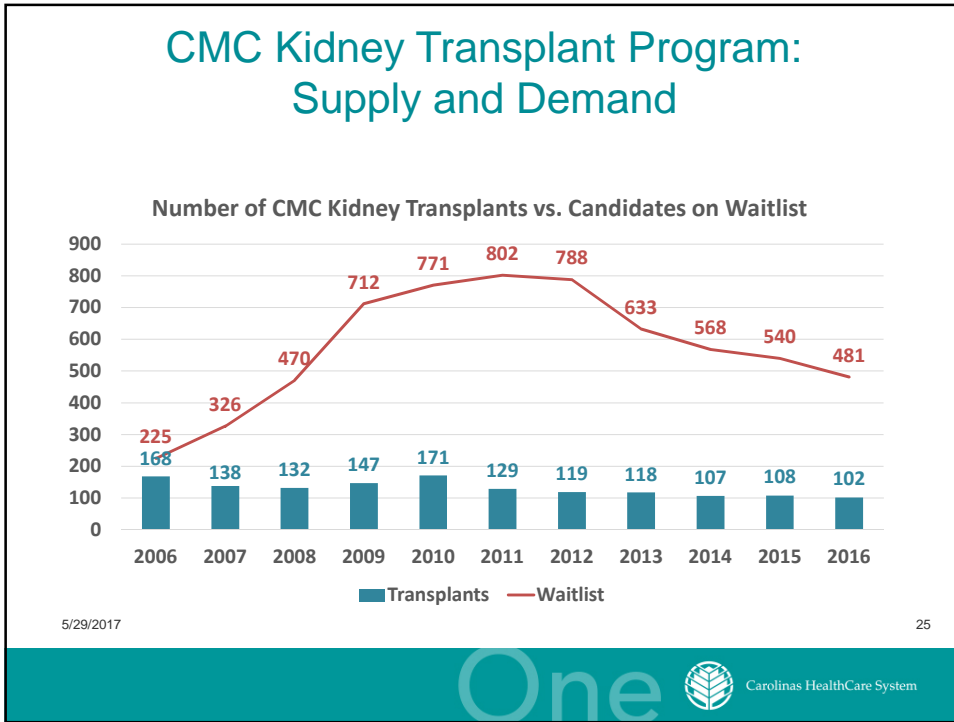
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24

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Why Living Donation?

- Shorter waiting time; 22 people die each day waiting for an organ!
- Better transplant results.
 - Living donor kidney transplant has a higher success rate. (97% vs. 88% one year graft function)
 - Living donor kidney transplants last longer. (Median transplant lifespan 8-12 yrs (deceased) vs. 15-22 yrs (living))
- Longer lifetime benefit from transplant



5/29/2017 26

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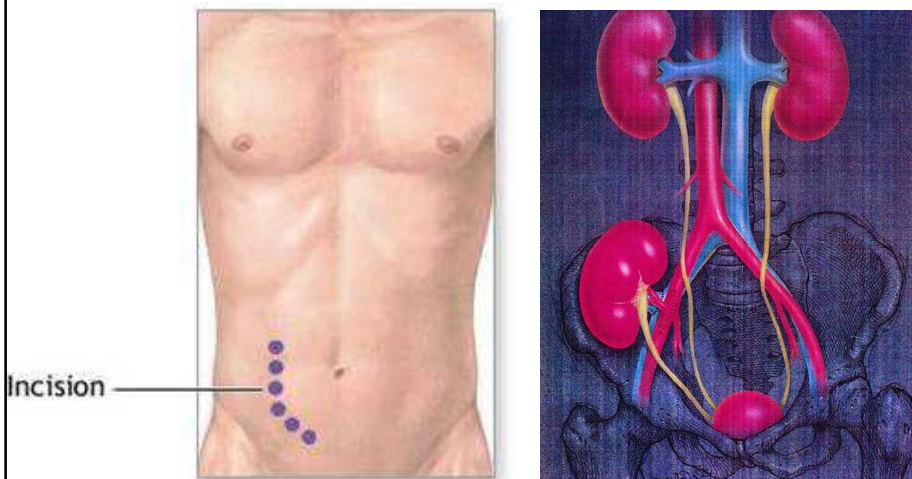
Living Donor Evaluation

- Donors must be over 18 years old and in good medical health; all are screened thoroughly
- Donor's risk will be considered separately from recipient's need for transplant and is evaluated separately by the Living Donor Team
- Donor will be informed of the risks of donation however their life expectancy and quality of life is unchanged from the rest of the general population
- Donor work-up covered by recipient's insurance
- **Donor safety is very important to us!**

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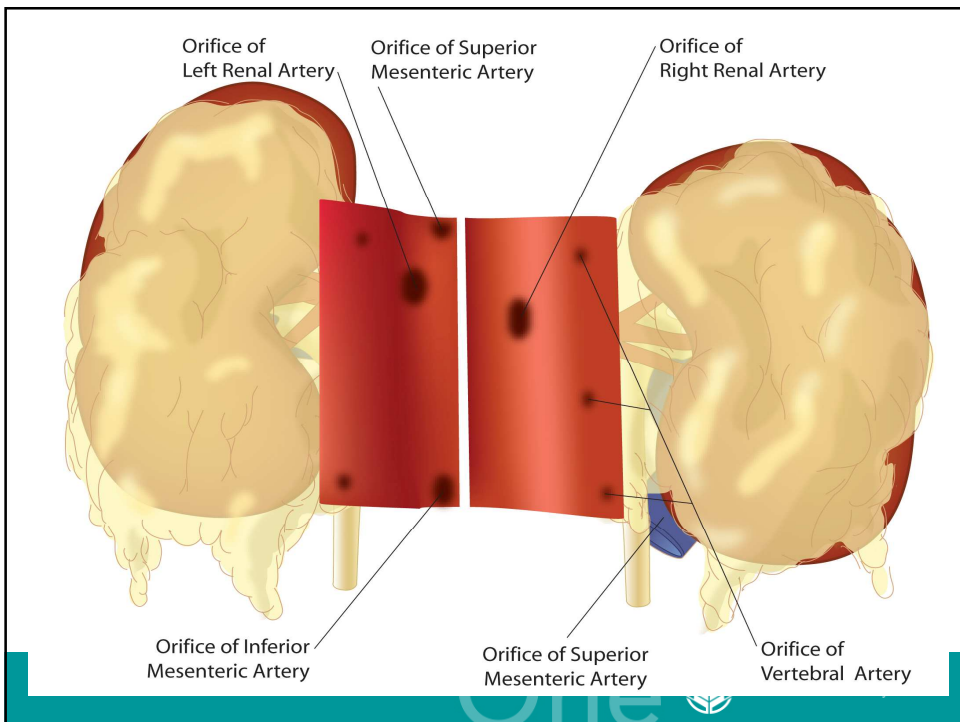
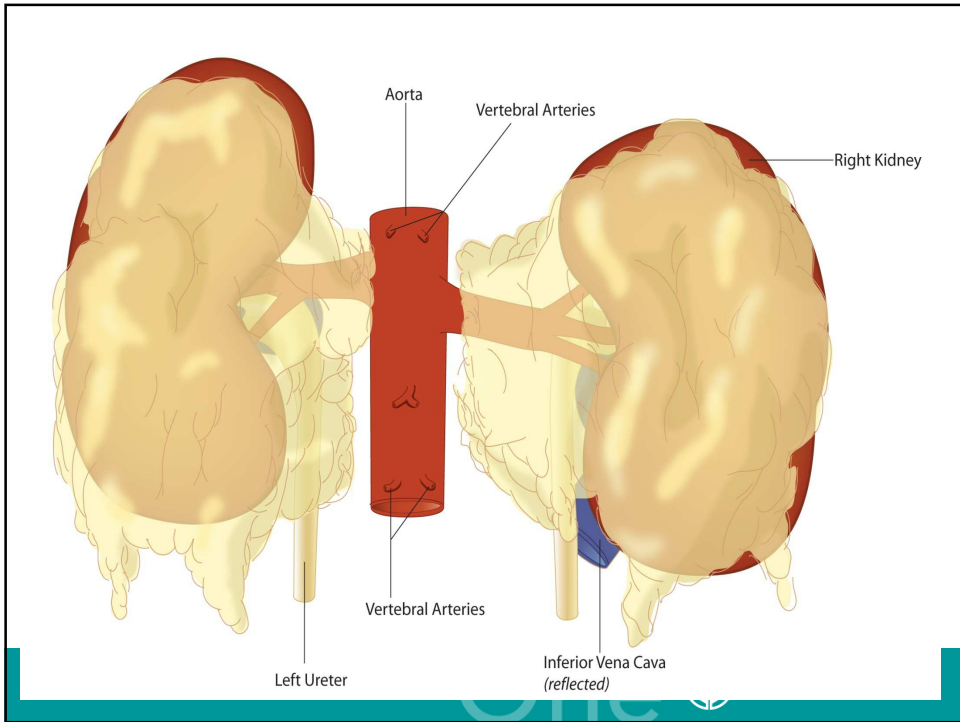
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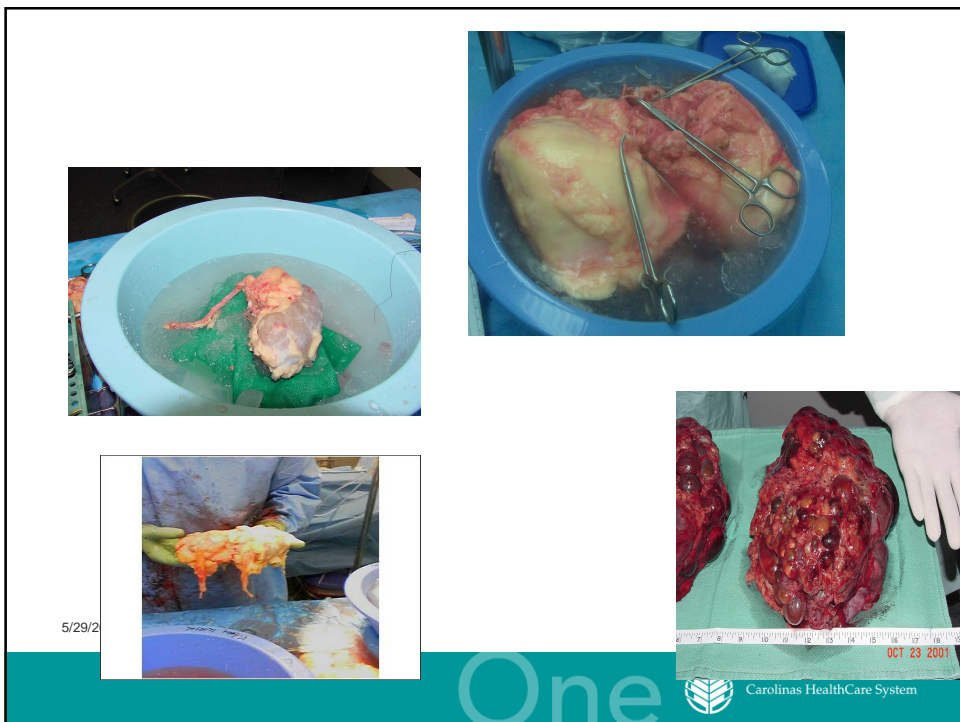
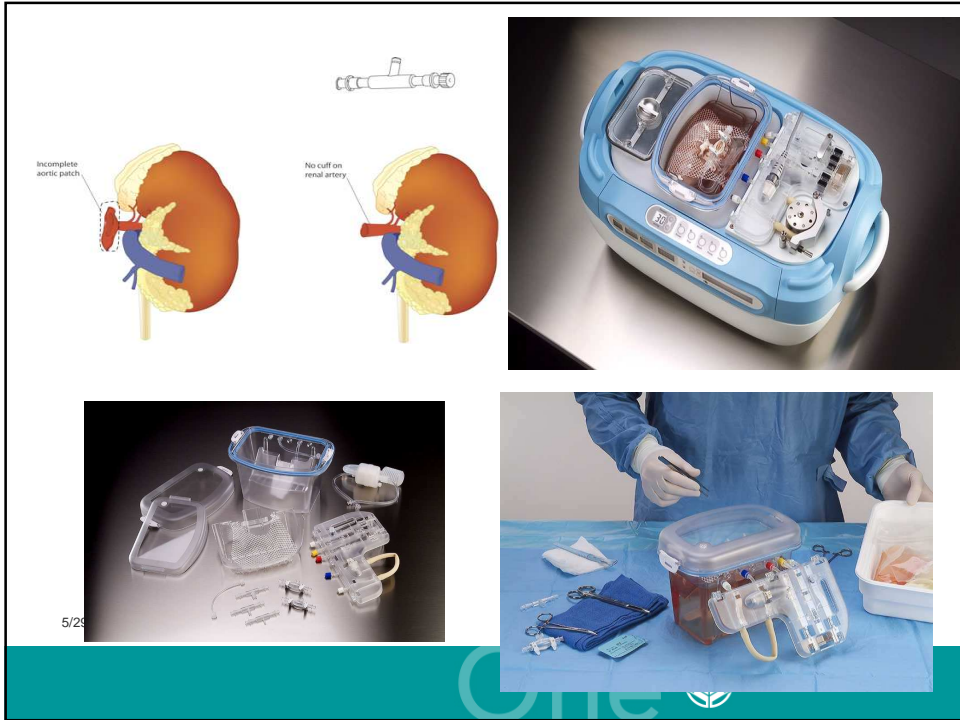
Kidney Transplant



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28





Potential Complications of Kidney Transplant

- Internal bleeding that possibly requires re-operation or blood product transfusions
- Thrombosis (clotting) of the vessels to the transplanted organ
- Fluid collections
- Male infertility
- Loss of organ or non-function, with possible need for kidney removal and repeat transplant in the future
- Death

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33

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Wound Complications of Kidney Transplant

- Hernia
- Infection
- Scarring
- Dehiscence (opening of the incision)

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34

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Types of Infections in Transplant Patients

Diagnosis of post-transplant infections is difficult because immunosuppressive agents may decrease inflammatory response

Bacterial	Viral	Fungal	Parasitic
<ul style="list-style-type: none"> • 80 % of infections • UTI is most common • Enteric gram neg bacteria • Pseudomonas • Legionella • Salmonella • Mycobacterium • Listeria 	<ul style="list-style-type: none"> • CMV • BK virus • Herpes simplex • Varicella zoster • Hepatitis B, C • Influenza 	<ul style="list-style-type: none"> • Candida • Aspergillus • Cryptococcus • Histoplasma 	<ul style="list-style-type: none"> • Toxoplasma gondii • Cryptosporidium

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Most Common Nosocomial (hospital-acquired) Infections

- Clostridium difficile (C-diff)
- VRE
- MRSA

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36



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Prevention of Infection

- Strict Hand Washing!!!
- Administration of anti-microbials
- Teach patients importance of hand washing, avoid people who are sick, avoid potential animal sources of infection (cat litter box, bird cages), obtain yearly flu vaccine, avoid raw or partially cooked foods

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37

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Cancer Transmission from the donor to the recipient

In 2007, according to the Disease Transmission Advisory Committee, there were seven recipients who had clearly documented cases of a donor-related cancer from a total of four donors, and of these seven recipients, five died from this cancer transmission. Based on the total number of deceased organ donors in the US that year, there is about a 0.3% risk of a recipient developing cancer from a donor organ. The types of cancers reported in 2007 include kidney cancer, lung cancer, brain cancer (glioblastoma multiforme), liver cancer and melanoma. The transplant center does extensive testing of donors to minimize the risk of transmitting both infectious disease and cancer from the donor to the recipient, but no system of screening can eliminate risks of donor transmission of disease.

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38

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Rejection of Kidney Transplant

- Concept- The immune system protects against antigens associated with foreign substances. Some WBC produce antibodies that attack “invaders” or mark them for destroying. Sometimes, the immune system may attack a transplanted organ.
- Four types of rejection- Hyperacute, Accelerated, Acute, Chronic

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39

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Potential Long-Term Risks

- Recurrence of primary disease leading to need to restart dialysis or have another transplant (for example, diabetes in the kidney)
- Malignancies (cancers) – solid organ, skin, lymphoma
- High blood pressure requiring lifetime meds
- Diabetes
- High cholesterol
- Coronary artery disease

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40

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Strategies to Prevent Long-Term Complications

- ✓ Maintain patient on minimum amount of immunosuppression that is needed to prevent rejection
- ✓ Adapt immunosuppression to patient's risk profile
- ✓ Encourage a healthy lifestyle
- ✓ Screen for cancer routinely (mammogram, pap smear, colonoscopy, PSA)
- ✓ Preserve bone health (take calcium and vitamin D supp)

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41

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QUESTIONS?



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42

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