



WELCOME

Your courtesy is appreciated

- Please remember to turn all electronic devices to silent mode
- If you are attending with a young child please use discretion, we ask that you try not to disrupt another's learning experience



Caring for the Solid Organ Transplant Recipient: A Chronic Issue

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Session Objectives

- Participant will be able to identify two infectious issues that are common in the post solid organ transplant patient
- Participants will be able to recognize two medical complications treatments post transplant



Transplant Process Overview

- Referral for transplantation
 - Find a transplant center
- Financial approval for Evaluation
- Evaluation
 - Determine need for transplant
- Listing
 - Inactive
 - Active



- Fine Tuning
- Transplantation
- Follow up visits
- Well visits
- Sick Visits



Referrals

To determine need for transplantation

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Kidney

- Urological
- HUS
- Nephrotic Syndromes
- Glomerular diseases
- Unknown etiology



Liver

- Congenital

- Acquired



Heart

- Congenital defects

- Cardiomyopathies



And more...

- Bowel
 - Short bowel syndrome
 - Malabsorption
- Lungs
 - Cystic Fibrosis
 - Radiation therapy
- Pancreas
 - Diabetes



Financial

- Need approval for evaluation

- Some insurances have "Centers of Excellence" that they will refer to



Evaluation

What does it take?





Financial

- Insurance approval for transplantation
- Out of pocket costs
- Requirements
 - Labs, where they can be done
 - Hospitalizations
- Medications



Lab Work

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- CBC with Differential
- Complete Chemistry Profile
 - Chemistries including Mg, PO4
 - Liver function
 - Ionized Calcium



Viral Titers

- Cytomegalavirus
 - IgG (-)
Preventing active disease while acquiring immunity
 - IgG (+)
Preventing re-activation
- Epstein Barr Virus
 - Greatest reason for Post Transplant Lymphoproliferative Disease



Viral Titers

- HIV
 - Not an immediate rule out
 - Non-detectible viral load
 - Stable home environment
- BK Virus PCR (not titer)
 - Polyoma virus



Viral Titers

- Varicella
- Measles
- Mumps
- Rubella
- Hepatitis
 - A
 - B
 - C (no immunization currently available)





Update

- Pevnar under age of 2 years
- Pnuemovax over age of 2 years
- Menactra
- Human Papaloma Virus
- Flu Shots



Organ Specific Tests



Diagnosis Tests

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Ultrasound



X-Ray



CAT Scan





Nutritional Evaluation

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Follow

- Height
- Weight
- BMI



Optimize

- G-tube
- Nasogastric tube
- Hyperalumentation and Lipids



Dietary Supplements

- Protein
 - Promod
- Fat
 - Vegetable oil
 - MCT oil
- Calories
 - Duocal



Psychosocial Evaluation

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- Social worker and/or Psychologist
 - Evaluates support systems
 - Understanding of life changes
 - Understanding of disease entities
 - Donors





Dental Health

- Bi-annual visits
- Complete any dental work needed prior to transplant if possible



Potential Donors

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Deceased



Live

- Kidney
- Liver
- Bowel



Listing

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Fine Tuning

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Psychosocial

- Non-adherence
- Phone contact
- Fund raising



General

- Nutritional
- Healthy state
- Immunize



Transplant

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Pre-Operative

The Great Hurry Up and Wait

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Inter-Operative

- Induction therapy
- Blood products
- Hemodynamic Stability



Immediate Post-Operative

- Hemodynamic
- Respiratory
- Immunosuppression
- Organ function





Post-Operative Course

- Varies by age
- Tolerating diet
- Start Prophylactic therapies
- Teaching home care



Discharge



Medications

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Induction therapy

- Monoclonal antibodies. Depletes T cells
- Basiliximab
- Xenopax
- Altuzimab
- Thymogloulin



Calcineurin Inhibitors



Mycophenolate Mofitile





Target of Rapa Inhibitor



Steroids



And others...

- TMP-SMX
- Gancyclovir
 - IV
 - PO
 - Gancyclovir
 - Valgancyclovir
- Anti-fungal
 - Mycelex
 - Nystatin
- Anti-hypertensives



Follow up

- Recommend seeing primary care doctor in first two weeks after discharge to establish a baseline of health.
- Labs (Usually done by transplant center and shared)
- Diagnostic tests organ specific
- Immunizations
 - Keep up to date
 - Follow up with transplant team to inquire if contraindicated



Dental Maintenance

- Bi-annual visits
- Antibiotic prophylaxis



Annual visits

- Usual child health maintenance
- Blood pressure monitoring
- Kidney function





Sick Visits

- Communication
- Antibiotics
 - Use per normal routine



Viral Studies

titers are not helpful.

PCRs to check and follow viral loads are more sensitive and helpful.



CMV

- A DNA virus of the Herpes Family



Signs and Symptoms

- **Gastroenteritis**
- **Enteric Ulceration**
- **Hepatitis**
- **Pneumonia**
- **Fever**
- **Leukopenia**
- **Pancytopenia**



Diagnosis

- Viral PCR
 - Qualitative
 - Quantitative
- Culture
- Titers
- Pathology



Treatment

- **IV Ganciclovir**
 - 2-3 week course
 - 5 mg/kg bid
- **Oral Ganciclovir**
 - 3-6 month course
 - 10 mg/kg bid or tid
 - max dose 1 gram tid





- Valganciclovir
 - Oral equivalent to IV Ganciclovir
 - Only comes in pill form but can be compounded into suspension
- 450 mg pills
- Treatment for adolescents is 450 or 900 once daily
- Dosed in mg/kg in younger children



Side Effects of Treatment

Leukopenia
Thrombocytopenia
Pancytopenia
Anemia

Treatment may need to be held in severe cases



EBV

A DNA virus of the herpes family

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EBV

Signs and Symptoms

- Fever
- Sore throat
- Enlarged tonsils
- Lymphadenopathy
- Hepatitis



Diagnosis

- Monospot
- Quantitative PCR
- Titers
- Pathology



Treatment

- No known treatment
- Lowered Immunosuppression
- Balance ability to fight infection with risk of rejection





Supportive Care

- Anti-pyretic
- Pain Management
- Blood Pressure Support
- Lower Immunosuppressant
- Anti-viral in extreme cases
 - None are FDA approved for treatment of EBV



BKV

Polyoma Virus

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Signs and Symptoms

- Fever
- Respiratory illness
- Sterile pyuria



Diagnosis

- Urine PCR
- Serum PCR
- Pathology



Treatment

- Leflunomide
- Cidofovir
- Ciprofloxin



Rejection

- Biopsy is the only way to be certain it is rejection
- Increasing immunosuppression is the treatment which may include adding more agents





PTLD

Post Transplant Lymphoproliferative Disease

80-90% EBV related

Titers not helpful

PCRs

Quick diagnosis



Pearls



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Summary

Session Take-Aways/Deliverables

- 1.
- 2.
- 3.



Questions

(last 5 minutes of session)

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Thank you

We remind all participants to visit CE Pavilion to complete your session evaluations and record your Continuing Education contact hours.

NAPNAP hopes you have an enjoyable conference experience, and enjoy your stay in Nashville, TN.

Mark your calendars! Next year's conference will take place in San Diego, CA on March 19 - 22, 2009.

