Risk of Infection in IBD

- Infections are the most common significant adverse event among immunosuppressed patients with IBD
- Risk of serious infection increases with the number of immunosuppressive therapies
- Many infections are preventable with routine preventive immunizations

Management strategies for NSAID-associated peptic ulcer disease

### A Minority of ‘At Risk’ Patients are Immunized

- Over 80% had PCP visit Within Previous 12 months

### IBD-Specific Vaccination Guidelines

- IBD itself should not impact vaccine response
- IBD is rare < age 5, so most with IBD have gotten routine vaccinations already
- Impact in adults: Influenza and pneumococcal
- At diagnosis, evaluate for ‘routine vaccinations’, ask about varicella exposure and check if in doubt
- Avoid live virus vaccines if immunosuppressed
- [Consider HPV in immunosuppressed females]

Melmed et al. Am J Gastro 2006
Sands et al. IBD journal 2004
Melmed IBD Journal 2009
20 yf New Diagnosis of Ileal CD

- Previously healthy other than mild asthma
  - Intermittent RLQ pain, soft stool x 1 yr
  - 2 family members with CD
  - 70 cm ileal disease
  - Rec: Combined 6MP/anti-TNF

**How can we prevent treatment-associated infection in this woman?**

She should already have acquired immunity against...

- Diptheria, pertussis, tetanus (DTaP)
- Measles, mumps, rubella (MMR)
- Hemophilus influenza b (Hib), Hepatitis A and B
- Polio
- HPV

- Any others?
- Any special considerations for college?
Influenza

Who Should Get Vaccinated?

- (2010) – Everyone over 6 months
- High risk groups
  - immunosuppression
  - “Potential Transmitters” of the flu (Healthcare workers)
  - Household contacts of high risk individuals

Influenza and IBD

- Multiple studies, 2004-2010
- IBD generally did not impact response
- immunosuppression
  - Generally impaired response for 1-2 antigens, especially if on combo therapy
- No significant adverse events

DeBruyn JC et al. Inflam Bowel Dis 2011 Apr 6
Lu Y. Am J Gastro 2009 Feb
Cullen et al. Gut. 2011 Jul 13
Management strategies for NSAID-associated peptic ulcer disease

Invasive Pneumococcal Disease

- *S. Pneumoniae* is a leading cause of sepsis, pneumonia, meningitis, and otitis media
- At risk: Immunosuppression, comorbidities
- Booster after 5 years

www.cdc.gov

Individual Antigens: GMT > 1 ug/mL

![Graph showing antibody levels for different antigens](chart.png)

*IBD TNF/IM
**IBD ASA
*CTRL

*p<0.05, **p<0.01

Melmed et al. *Am J Gastro.* Jan 2010
Combined immunosuppression impairs response to Pneumococcal vaccine

- Combination immunomodulator + anti-TNF resulted in significantly lower antibody responses
- Immunosuppression is unpredictable so vaccinate everyone

Meningococcus

- Increased risk in ‘close quarters’ i.e. army barracks, college dormitories
- Polysaccharide vaccine indicated
- No formal studies in IBD, but generally considered safe in IS

Hepatitis B

- Reports of fulminant / fatal HBV in IFX recipients, including ‘reactivated HBV’
- Indications for vaccination
  - HCW
  - Hi risk behaviors (MSM, IVDU, multiple partners)
  - Multiple transfusions/tattoos

Live Virus Vaccines

- Generally contraindicated in the immunosuppressed
  - Common Sense Caveat:
    - Unless the risk of natural infection is greater than the risk of immunization
- Includes varicella, yellow fever, anthrax, BCG, MMR, smallpox, adenovirus, live cholera, influenza virus vaccine (intranasal), VZV, shingles vaccine
**Varicella (Chicken Pox)**

- Mortality in adults in 20/100,000 cases
- Disseminated disease in **30%** of immunocompromised patients
- Vaccination issues:
  - Hold steroids if possible
  - Household vaccination probably ok
  - If exposed – VZIG, acyclovir
  - *Careful risk: benefit if at risk, but naïve*

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**Varicella Vaccination Recall**

History of chicken pox or varicella vaccination? (n=167)

<table>
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<th>Category</th>
<th>Yes (n=149)</th>
<th>No (n=9)</th>
<th>Uncertain (n=10)</th>
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<tr>
<td>VZV evaluated:</td>
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<td></td>
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</tr>
<tr>
<td>detected:</td>
<td>25</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>not detected:</td>
<td>24</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>equivocal:</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

“70-90% of adults with negative or uncertain histories are immune” (www.cdc.gov)
Her VZV titer is undetectable  
Now what?

- Consult ID!
  - What is the risk of exposure?
  - How urgent is immunosuppression?
  - How long to wait after vaccination to start rx?

She wants to spend her semester abroad doing medical missionary work in Sub-Saharan Africa, an endemic area for yellow fever.  
**What do you advise?**

1. Get the vaccine before you go
2. The vaccine is contraindicated, so go to Brazil without it
3. Don’t go to Brazil
Travel

- Hepatitis A
- Hepatitis B
- Yellow fever –
  - Vaccine can be lethal in the immunosuppressed
  - Endemic regions in Africa, South America
  - If possible – DON’T GO
  - If not possible - educate risks from mosquitoes
    - Needs special letter of exemption from vaccination
What vaccines should be considered in our young female patient advised to initiate 6MP/anti-TNF?

• Influenza vaccine (not mist)
• Pneumococcal vaccine
• HPV (already done)
• HBV (already done)
• Meningococcal vaccine
• *** Varicella ***