Health Care Maintenance in the IBD Patient: What You Need to Know and Do

Francis A. Farraye, MD, MSc, FACG
Clinical Director, Section of Gastroenterology
Boston Medical Center
Professor of Medicine
Boston University School of Medicine

Health Maintenance Overview

Vaccinating the IBD Patient
- The problem
- Response to vaccines
- Appropriate vaccines for the IBD patient

Surveillance for Colorectal Neoplasia
Risks of Cervical and Skin Cancer
Bone Health
Smoking Cessation
Screening for Depression
Risks of Radiation
Ophthalmologic Evaluation
Health Maintenance in the IBD Patient

- IBD patients do not receive preventive services at the same rate as general medical patients
- GI MD/NPs are often the only clinician that the IBD patient will interact with
- Clarify the limits of your responsibilities with the patient


Health Maintenance in the IBD Patient

- Delegate routine health care issues to the primary care clinician
- Offer guidance on the unique health maintenance needs in IBD patient on immunomodulators and biologic agents
- Should certain health maintenance tasks such as vaccinations be the responsibility of the treating gastroenterologist?

The Vaccine Problem

Immunomodulators and biologics used to treat IBD puts patients at increased risk for infections
- Several of these are vaccine preventable
- Multiple case reports of infections including fulminant hepatitis or fatal varicella

IBD patients (like other patients on immunosuppressive therapy) are not being vaccinated appropriately


The Vaccine Problem

Survey of 169 IBD patients
- 145 on current/previous immunosuppression
- 28% reported regular flu shots
- 9% reported receiving pneumovax
- Common reasons for not getting vaccinated:
  - Lack of awareness
  - Fear of side effects

Study of 2076 IBD patients in Spain
- Only 12% of patients vaccinated against hepatitis B

The Vaccine Problem

Survey of 108 gastroenterologists (Fall 2009)

- Poor knowledge regarding the appropriate vaccines to recommend
- 20-30% would erroneously give live vaccine to immunosuppressed patient
- 25-35% would erroneously hold live vaccine to immunocompetent patient


GI Physicians Do Not Inquire About Immunization History

<table>
<thead>
<tr>
<th>How Often</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Always</td>
<td>20 (18.5)</td>
</tr>
<tr>
<td>Most of the time</td>
<td>36 (33.3)</td>
</tr>
<tr>
<td>Half of the time</td>
<td>5 (4.7)</td>
</tr>
<tr>
<td>Sometimes</td>
<td>40 (37)</td>
</tr>
<tr>
<td>Never</td>
<td>7 (6.5)</td>
</tr>
</tbody>
</table>

Gastroenterologists Put the Onus for Vaccinations on the PCP

Majority thought PCP was responsible for:
- Determining which vaccinations to give (65%)
- Administering the vaccine (83%)


PCPs Hesitant to Treat IBD Patients

- Survey of 61 attendees at a family medicine review course
- Only 37% of doctors felt comfortable providing primary care to IBD patients across a range of illness severity
- Only 30% felt comfortable coordinating vaccinations for the immunosuppressed IBD patient

GI Responsibility To Our Patients

- Gastroenterologists are often the primary decision makers for the IBD patient
- Should take a more proactive role in assuring that patients are vaccinated appropriately
- May allow for the administration of the appropriate vaccinations before immunosuppressive therapy is initiated


Immune Response in IBD: Will the Vaccine Work?

64 IBD patients vaccinated with pneumococcal vaccine

- 45% of patients on combination anti-TNF and immunomodulator mounted response
- 80% of non-immunosuppressed IBD patients mounted a response
- 85% of healthy controls mounted a response
- Authors concluded that newly diagnosed patients with IBD should undergo vaccination before the initiation of immunosuppressive therapy

Immune Response in IBD: Will the Vaccine Work?

36 IBD patients on AZA/6MP vaccinated with influenza, pneumovax, tetanus, HIB

- Responses to vaccine not significantly different compared to controls
- Authors concluded that therapy with 6MP or AZA does not interfere with patients ability to mount a normal immune response


Immune Response in IBD: Will the Vaccine Work?

96 IBD patients on 5ASAs, AZA, anti-TNF or combination AZA/anti-TNF) given pneumovax

- Response to vaccine not significantly different compared to 5ASA controls in patients on AZA/6MP (78.9% vs 88.6%, P=0.43)
- Responses to vaccine decreased in patients on infliximab or infliximab and AZA compared to controls (57.6% and 62.5% vs 88.6%, P < 0.05)
- Authors conclude that therapy with 6MP or AZA do not interfere with the patients ability to mount a normal immune response

Immune Response in IBD: Will the Vaccine Work?

Study of H1N1 influenza vaccine in 105 IBD patients

- Immunosuppressed pts with lower rate of seroprotection than non-immunosuppressed (44% vs 64%, p=0.06)
- Combined immunosuppression with even lower titers compared to patients on monotherapy


Immune Response in IBD: Will the Vaccine Work?

On monotherapy with immunomodulator?

- Normal immune response compared with controls or patients on 5ASAs

On monotherapy with anti-TNF?

- Diminished immune response compared with controls or patients on 5ASAs

Immune Response in IBD: Will the Vaccine Work?

On combination of immunomodulator and anti-TNF agent?

- Diminished immune response to vaccine compared to patient on monotherapy with immunomodulator or 5ASAs


Immune Response in IBD: Will the Vaccine Exacerbate IBD?

Although limited data in IBD patients, there is data in patients with other chronic immunologic diseases (MS, SLE) that vaccinations do not exacerbate disease activity.
Immune Response in IBD: Will the Vaccine Exacerbate IBD?

H1N1 vaccine

- 575 patients on immunomodulators or anti-TNFs received vaccine between 11/09-3/10 in 14 European countries
- Well tolerated
- Four weeks after vaccination, absence of flare was observed in 377 patients with CD (96.7%) and 151 with UC (95.6%)


Flu Season: 2011-2012

- CDC study of 2348 health care workers
  - Overall 66.9% of health care personnel were vaccinated
  - 85.6% of physicians
  - 77.9% of nurses
  - Coverage was 95.2% among health care practitioners who had an employer requirement for vaccination

Influenza Vaccination Coverage Among Health-Care Personnel — United States, 2011–12 Influenza Season. MMWR, September 28, 2012 61(38);753-757.
Keep your patients safe by being sure you and your staff are up to date with your own vaccinations

**Why You Need a Vaccination Protocol in Your Practice**

- Right thing to do for your patients
- Avoid preventable and costly infectious complications of treatment
- Several vaccine specific measures incorporated into IBD PQRS measures used to determine “quality” and payment for your practice
- Lower your liability
2012 Medicare Physician Quality Reporting System (PQRS)

Measure 269: Assessment of IBD activity and severity
Measure 270: IBD corticosteroid-sparing therapy
Measure 271: Corticosteroid related iatrogenic injury – bone loss assessment
Measure 272: Influenza immunization
Measure 273: Pneumococcal immunization
Measure 274: Testing for latent TB before anti-TNF therapy
Measure 275: Assessment of HBV status before initiating anti-TNF therapy
Measure 226: Tobacco use screening and cessation intervention

Summary

- IBD patients have poor immunization rates
- IBD patients can mount a response to vaccines
- Immunogenicity is diminished in patients on combination therapy of immunomodulator and anti-TNF agent
- If possible, vaccinate prior to initiation of immunosuppressive agents
- IBD disease activity will not be affected by vaccination
- Take responsibility to vaccinate your IBD patients or make explicit recommendations to the patients PCP
Vaccinating the IBD Patient
A Practical Guide

### Standard Immunization Schedule

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Dosing schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetanus, diphtheria, pertussis</td>
<td>Substitute 1 time dose of Tdap for Td booster; then boost with Td every ten</td>
</tr>
<tr>
<td>(Td/Tdap)</td>
<td>years. For patients &gt;65 years, Td booster every 10 years</td>
</tr>
<tr>
<td>Human papillomavirus (HPV)</td>
<td>3 doses in females between 19 – 26 years</td>
</tr>
<tr>
<td>Varicella</td>
<td>2 doses</td>
</tr>
<tr>
<td>Zoster</td>
<td>1 dose for patients &gt; 60 years</td>
</tr>
<tr>
<td>Measles, Mumps, Rubella (MMR)</td>
<td>1 or 2 doses for patients between 19 – 49 years, 1 dose after the age of 50</td>
</tr>
<tr>
<td></td>
<td>if some other risk factor (medical, occupational, lifestyle) is present</td>
</tr>
<tr>
<td>Influenza</td>
<td>1 dose annually</td>
</tr>
<tr>
<td>Pneumococcal (polysaccharide)</td>
<td>1 or 2 doses between 19 – 49 years if some other risk factor (medical,</td>
</tr>
<tr>
<td></td>
<td>occupational, lifestyle) is present. One dose for all patients &gt;65 years</td>
</tr>
<tr>
<td>Hepatitis A</td>
<td>2 doses in patients with risk factor (medical, occupational, lifestyle)</td>
</tr>
<tr>
<td>Hepatitis B</td>
<td>3 doses in patients with risk factor (medical, occupational, lifestyle)</td>
</tr>
<tr>
<td>Meningococcal</td>
<td>1 or more doses in patients with risk factor (medical, occupational, lifestyle)</td>
</tr>
</tbody>
</table>

**Vaccines to Consider**

- IBD is rare before age 5 so most patients have received all their childhood vaccines.
- In adults, consider hepatitis A, hepatitis B, HPV, influenza, herpes zoster and varicella vaccinations.

**General Vaccination Considerations**

<table>
<thead>
<tr>
<th>Titers to check at first office visit</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>MMR – if vaccination history unknown</td>
<td></td>
</tr>
<tr>
<td>Varicella – if vaccination history or history of chicken pox/zoster unknown</td>
<td></td>
</tr>
<tr>
<td>Hepatitis A – except those with evidence of protective titer within 5 years of vaccine administration</td>
<td></td>
</tr>
<tr>
<td>Hepatitis B – except those with evidence of protective titer within 5 years of vaccine administration</td>
<td></td>
</tr>
</tbody>
</table>

**Vaccinations to administer in specific patient groups regardless of immunosuppressive drug use**

- Tdap
- HPV
- Influenza (yearly)
- Pneumococcal
- Hepatitis A (if not immune)
- Hepatitis B (if not immune)
- Meningococcal

**Vaccinations to consider if NO plans to start immunosuppressive therapy in 4-12 weeks**

- MMR (if not immune)
- Varicella (if not immune)
- Zoster (if age 60 or older)

Inactivated Vaccine Recommendations (Regardless of Immunosuppression)

- Td/Tdap q 10 years
- HPV - 3 doses (0, 2, 6 months) for females 9-26 years
- Influenza annually
- Pneumococcal 1-2 doses (one time revaccination after 5 years if immunosuppressed)
- Hepatitis A - 2 doses
- Hepatitis B - 3 doses
  - Check post-vaccine titers 1 month after last dose
  - If no response, then vaccinate with double dose (or with combination hepatitis A/B)
- Meningococcal vaccine if risk of exposure


Definition of “Immunosuppressed”

- Rx with glucocorticoids (> prednisone 20mg/day equivalent for 2 or more weeks, and within 3 months of stopping)
- Rx with effective doses of 6MP/azathioprine or recent discontinuation within previous 3 months
- Rx with methotrexate or recent discontinuation within previous 3 months
- Rx with infliximab, adalimumab, certolizumab, or natalizumab or recent discontinuation within the previous 3 months.
- Significant protein-calorie malnutrition

Live Vaccine Recommendations: Varicella

Titer before vaccination?
- YES if history unknown or no prior varicella infection

Before initiation of immunosuppression?
- Contraindicated if plans to start therapy in 1 – 3 months

Already on immunosuppression?
- Contraindicated

Can family member be vaccinated?
- Yes
- Vaccine recipients who have a vaccine-related rash should avoid contact with the immunosuppressed patient


Live Vaccine Recommendations: Herpes Zoster

Titer before vaccination?
- No

Before initiation of biologic?
- Contraindicated if plans to start therapy in 1 to 3 months

Already on biologic?
- Contraindicated

What about immunomodulators?
- If on low doses methotrexate (<0.4mg/kg/week), azathioprine (<3.0mg/kg/day) or 6MP (<1.5mg/kg/day) or on short term steroids (<14 days), then CDC says ok to give vaccine

Can family member be vaccinated?
- Yes
- Vaccine recipients who have a vaccine-related rash should avoid contact with the immunosuppressed patient

Zoster Vaccine in Patients on anti-TNFs

- Large retrospective administrative database cohort study of over 460,000 patients with immune disorders including IBD
- No cases of zoster in 633 patients on biologic agents in the 42 days after receiving zoster vaccine
- Adjusted hazard ratio for the individuals receiving vaccine was 0.61 (95% CI, 0.52-0.71) over a median of 2 years of follow up
- Vaccine use was safe and associated with a lower zoster incidence over a median of 2 years of follow-up


The IBD Patient Leaving the Country

<table>
<thead>
<tr>
<th>Live Vaccines</th>
<th>Inactivated Vaccines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yellow fever virus</td>
<td>Japanese encephalitis virus</td>
</tr>
<tr>
<td>Measles mumps rubella (MMR)</td>
<td>Rabies virus</td>
</tr>
<tr>
<td>Oral typhoid</td>
<td>Injectable typhoid</td>
</tr>
<tr>
<td>Oral polio</td>
<td>Injectable polio</td>
</tr>
<tr>
<td>Intranasal influenza</td>
<td>Injectable influenza</td>
</tr>
<tr>
<td>Tuberculosis BCG</td>
<td>Hepatitis A</td>
</tr>
<tr>
<td></td>
<td>Hepatitis B</td>
</tr>
<tr>
<td></td>
<td>Human Papilloma virus</td>
</tr>
<tr>
<td></td>
<td>Meningococcal</td>
</tr>
<tr>
<td></td>
<td>Tetanus diphtheria (Td)</td>
</tr>
<tr>
<td></td>
<td>Tetanus diphtheria acellular pertussis (Td)</td>
</tr>
</tbody>
</table>

QI Projects in Vaccination

- Short survey completed by patient prior to seeing the doctor increased vaccination rates from 54-81% in an IBD referral practice
- Electronic reminders in the EMR were successful in improving vaccination rates in a rheumatology clinic


Summary

- IBD patients have poor immunization rates
- IBD patients can mount a response to vaccines
- Immunogenicity may be diminished in patients on combination therapy of immunomodulator and anti-TNF agent
- IBD disease activity will not be affected by vaccination
- When possible, vaccinate prior to initiation of immunosuppressive agents
Surveillance for Colorectal Neoplasia

Surveillance Colonoscopy (AGA)

- All patients should undergo a screening colonoscopy a maximum of 8 years after onset of symptoms
  - Regardless of extent of disease at diagnosis
  - Multiple biopsies to assess microscopic extent of inflammation
- Ulcerative proctitis or proctosigmoiditis are not considered at increased risk for IBD-related CRC
  - Manage on the basis of average-risk recommendations
- Patients with extensive or left-sided colitis should begin surveillance within 1 to 2 years after the initial screening colonoscopy

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Surveillance Colonoscopy (AGA)

- The optimal surveillance interval has not been clearly defined
  - After 2 negative examinations survey every 1 to 3 years
- Representative biopsy specimens from each anatomic section of the colon should be obtained
  - Minimum of 33 biopsy specimens be taken in pancolitis patients
- Chromoendoscopy with targeted biopsies is recommended as an alternative to random biopsies for endoscopists who have expertise with this technique
  - Increased sensitivity for detecting dysplasia


Surveillance Colonoscopy (AGA)

- Patient with PSC
  - Survey at time of diagnosis and then yearly
- Ideally, surveillance colonoscopy should be performed when the colonic disease is in remission
- More frequent surveillance examinations:
  - History of CRC in first-degree relatives
  - Ongoing active endoscopic or histologic inflammation
  - Anatomic abnormalities such as a foreshortened colon, stricture
  - Multiple inflammatory pseudopolyps
- Same recommendations for patients with Crohn’s colitis who have disease involving at least one third of the length of the colon

Surveillance Colonoscopy (BSG)

- All patients with ulcerative colitis or Crohn's colitis should have a screening colonoscopy approximately 10 years after the onset of colitic symptoms to assess disease extent and other endoscopic risk factors
- Surveillance colonoscopies should be performed, where possible, when the disease is in remission
- Surveillance procedure should not be unduly delayed if remission cannot be achieved
Surveillance Colonoscopy (BSG)

- Cancer risk factors
  - Duration and extent of disease, primary sclerosing cholangitis, family history of CRC and endoscopic and histological appearances at colonoscopy
  - Screening intervals recommended account for such variables
  - Surveillance colonoscopies should be conducted yearly, 3-yearly or 5-yearly accordingly


Surveillance Colonoscopy (BSG)

- Pancolonic dye spraying with targeted biopsy of abnormal areas is recommended
- If chromoendoscopy is not used, take 2-4 random biopsy specimens every 10cms from the entire colon
- If a dysplastic polyp is detected within an area of inflammation and can be removed in its entirety, it is not necessary to recommend colectomy


PAP Testing and Cervical Cancer
PAP Testing in IBD Patients

- Risk factors for abnormal PAP: multiple sexual partners, cigarette smoking, OCP use
- Higher prevalence of abnormal PAP smears in women with IBD
- Associated with immunomodulator use
- Vaccination for HPV is warranted


PAP Testing in IBD Patients

- Document an up-to-date PAP smear when starting immunosuppressive therapy
- Rule out HPV infection
- Rule out an abnormal cervical cytology
- Women on immunomodulators should follow ACOG guidelines for yearly PAP testing

Skin Cancer

Non Melanoma Skin Cancer (NMSC)

- Estimated 3.5 million cases per year of NMSC
- Increase risk in immunosuppressed IBD patients
  - Thiopurine use (OR: 4.27, CI 3.08-5.92)
  - Anti-TNF use (OR: 2.18, CI 1.07-4.46)
  - Combined thiopurine and anti-TNF agent (OR: 6.75, CI 2.74-16.65)
- Educate patient on sun protection strategies
- Yearly derm evaluation recommended in patients on immunosuppressive agents

Bone Health

Bone Health In IBD Patients

- IBD patients have increased risk of osteoporosis and osteopenia
  - Risk factors: ethnicity, family history, lifestyle and dietary habits, BMI, OB history, severity of intestinal inflammation, steroids
- DEXA gold standard
  - Osteopenia T score of -1 to -2.5
  - Osteoporosis T score <2.5
- Increased risk of fracture in individuals with low BMD

Bone Health in IBD Patients

- Measure 25 OH Vitamin D levels in all patients
- Selectively order bone density scan (DEXA) in IBD patients with risk factors for osteoporosis and osteopenia
- Minimize steroid use when possible, adding steroid-sparing agents where appropriate
- Supplementation with calcium, vitamin D in all patients on steroids and bisphosphonates in high risk individuals


Smoking Cessation
Smoking Cessation in CD Patients

- Increased prevalence of Crohn’s disease in smokers

- Crohn’s disease patients who are smokers
  - More severe ileal disease, more frequent flares, an increased need for steroids and immunomodulators and higher rates of surgery

- Smoking cessation is a crucial aspect in the management of Crohn’s patients that is often overlooked

Cosnes J. Inflamm Bowel Dis 2008;14 Suppl 2:S14-5.

Smoking Cessation in CD Patients

- Smoking cessation
  - Decreased risk of relapse
  - Decreases need for steroids or immunomodulators

- Negative effects of smoking are dose-dependent
  - Any decrease in the number of cigarettes smoked daily can improve the course of Crohn’s disease

Cosnes J. Inflamm Bowel Dis 2008;14 Suppl 2:S14-5.
Depression

- May affect as many as 15-35% of patients with IBD
- Predisposing factors: chronic relapsing nature of IBD and some medications used as treatment
- Appropriate medical treatments are available and well tolerated

Screening for Depression

- “Over the past month, have you felt down, depressed, or hopeless?”
- “Over the past month, have you felt little interest or pleasure in doing things?”
- Sensitivity of 97% and a specificity of 67% for identifying depression when tested in a primary care setting with patients not receiving psychotropic drugs


Radiation and the IBD Patient
Deleterious Effects of Excess Imaging


Estimated Number of CT Scans Performed Annually in the United States

Typical Organ Radiation Doses from Various Radiologic Studies


<table>
<thead>
<tr>
<th>Study Type</th>
<th>Relevant Organ</th>
<th>Relevant Organ Dose* (mGy or mSv)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dental radiography</td>
<td>Brain</td>
<td>0.005</td>
</tr>
<tr>
<td>Posterior-anterior chest radiography</td>
<td>Lung</td>
<td>0.01</td>
</tr>
<tr>
<td>Lateral chest radiography</td>
<td>Lung</td>
<td>0.15</td>
</tr>
<tr>
<td>Screening mammography</td>
<td>Breast</td>
<td>3</td>
</tr>
<tr>
<td>Adult abdominal CT</td>
<td>Stomach</td>
<td>10</td>
</tr>
<tr>
<td>Barium enema</td>
<td>Colon</td>
<td>15</td>
</tr>
<tr>
<td>Neonatal abdominal CT</td>
<td>Stomach</td>
<td>20</td>
</tr>
</tbody>
</table>

* The radiation dose, a measure of ionizing energy absorbed per unit of mass, is expressed in grays (Gy) or milligrays (mGy). 1 Gy=1 joule per kilogram. The radiation dose is often expressed as an equivalent dose in sieverts (Sv) or millisieverts (mSv). For x-ray radiation, which is the type used in CT scanners, 1 mSv=1 mGy.

Estimated Dependence of Lifetime Radiation-Induced Risk of Cancer on Age at Exposure for Two Radiogenic Cancers

Pediatric X-Ray Exposure

- 965 children with CD and 628 with UC
- Over 24 months, 34% of CD subjects and 23% of UC subjects were exposed to moderate diagnostic radiation
- CT accounted for 28% and 25% of all studies in CD and UC subjects, respectively
- Risk factors for imaging included ED visit, hospitalization and surgery

Pediatric X-Ray Exposure

- Conclusions:
  - A substantial proportion of children are exposed to moderate amounts of radiation
  - This high utilization may impart long term risk


Ophthalmologic Issues in the IBD Patient
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Ophthalmologic Issues

- Estimated that approximately ten percent of IBD patients develop ocular problems
- Several ocular manifestations are associated with significant morbidity
  - uveitis, scleritis, episcleritis, corneal disease and keratoconjunctivitis sicca
- Patients on chronic corticosteroids should be evaluated by an ophthalmologist for glaucoma and cataracts


Health Care Maintenance Chart

http://www.ccfa.org/media/pdf/FactSheets/healthmaint.pdf
Conclusions

- IBD patients have low immunization rates so ask about vaccines
- Take responsibility to vaccinate your IBD patients or make explicit recommendations to the patients PCP
- Make sure you and your staff are vaccinated
- Be aware of the risks of cervical, colon and skin cancer
- Smoking cessation in your CD patients of paramount importance
- Consider depression, bone disease and ocular issues
- Limit CT scans substituting MR imaging where possible