GI Cancer Screening –
Is It Worth It?

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"Life is a sexually transmitted disease, and the mortality rate is 100%"
. . . J.D. Laings________(?)

With this sentiment in mind, the purpose of preventative medicine is to "delay the inevitable."

Today's presentation will highlight the following areas regarding our topic question:

- **FOR SCREENING TO BE EFFECTIVE, ITS PURPOSE MUST NOT BE TO ONLY DISCOVER CANCER, BUT TO PREVENT MORTALITY**

  If 1/3 of colorectal (CRC) patients will die of the disease, then the goal is to perform preventative screening – ie lower the incidence of cancer by finding precursor lesions.

- **DO ALL FORMS OF GI CANCER SCREENING PROVIDE EQUAL RESULTS?**
- **IS SCREENING FOR GI CANCER "COST EFFECTIVE?"**
- **DISCUSSION OF CRC, ESOPHAGEAL, PANCREATIC AND LIVER CANCER SCREENING**

CRC SCREENING

- **Lifetime incidence for patients at average risk for CRC is 5%. 90% of CRC cases occur after age 50.**

- **CRC Screening is important is overall cancer screening strategy as it is the 2nd leading cause of cancer deaths – accounting for 9% of**

- ❖ **CRC Screening is important is overall cancer screening strategy as it is the 2nd leading cause of cancer deaths – accounting for 9% of all cancer deaths. 1 in 3 patients who develop CRC will die.**

- ❖ **CRC Screening began in the late 1980's. In 2010, statistics state that 65% of population have had "adequate screening" for the disease.**

<u>HOW CAN CRC SCREENING IMPACT INCIDENCE?</u>

- ❖ **<u>Adenoma to Carcinoma Sequence</u>**

  Nearly all colon cancer has an adenomatous polyp as a precursor lesion. Progression from adenoma to cancer takes at least 10 years – usually 15-20. As developing polyps increase in size, the risk of cancer increases.

- ❖ **<u>Removal of Colon Polyps Will Prevent Colon Cancer</u>**

  National polyp study ________ ________ followed 1,418 patients who had polyps removed. Incidence of CRC was 90% less than patients who had polyps found but not removed, and 76% less than general population.

- ❖ **<u>(R) Sided Versus (L) Sided Polyps</u>**

  Flat polyps are more common in the (R) side of the colon; more difficult to detect and account for 30+% of adenomas. Because of this, colonoscopy has historically been more effective on the (L) side. This will change with better equipment, instruments and more training for detecting these subtle lesions.

- ❖ **<u>Screening Can Impact Incidences of CRC by Detecting and Removing Precursor Lesions</u>**

  Do all types of CRC Screening Tests provide equal results?
  To answer this often asked question, we should discuss the types of screening tests available and their capabilities.
  Tests available for CRC Screening are:
  - ➢ **Tests that detect bleeding**
  - ➢ **Tests that detect Stool DNA**
  - ➢ **CT colonography**
  - ➢ **Barium Enema**
  - ➢ **Flexible Sigmoidoscopy**
  - ➢ **Colonoscopy**

<u>Tests That Detect Bleeding</u>

- **Gu based fecal occult blood test most sensitive**

Tests That Detect Bleeding

- Gu___ based fecal occult blood test most sensitive
- Immunochemical based fecal occult blood test most specific
- 15-18% mortality reduction
- Require colonoscopic follow-up on all positives

Stool DNA Testing

- Patient needs to collect entire bowel movement and the test is expensive – can give "false positives" and still require colonoscopy follow-up

CT Colonography

- Some studies suggest testing is as sensitive as optimal colonoscopy, but these studies did not take into account the flat polyps, which will rarely be identified by CT colography
- Some concern has been raised regarding cumulative radiation dose with repeated screenings
- Most expensive screening method – also needs to be repeated at least every 5 years
- Would still require colonoscopy to remove any polyps or lesions found on CT

Barium Enema

- Low outcomes in detecting flat lesions
- Any findings require colonoscopy to confirm and treat
- Poor patient acceptance due to discomfort

Colonoscopy

- Capable of detection and removal at the same time
- Longest interval between screening exams (10 Years)
- Risks of bleeding, perforation in 1/500 screening polypectomies; 1/10,000 screening exams
- Greatest detection sensitivity of all screening options
- Only test that can interrupt the polyp-to-cancer sequence
- Gives 90+% decrease in incidence of colon cancer

Summary of CRC Screening Tests

Therefore, optimal colonoscopy should be considered the "Gold Standard" that all other forms of CRC screening should be compared to. Colonoscopy is . . . .

- ✓ The most sensitive testing form
- ✓ The only test that will prevent CRC
- ✓ Cost effective. Recent studies suggest that CRC by colonoscopy is not only cost effective (less than $50,000 spent per year o__ life saved) but cost savings from the soaring costs of treatment for

not only cost effective (less than $50,000 spent per year o__ life saved) but cost savings from the soaring costs of treatment for advanced colo-rectal cancer with newer targeted therapies

A very impressive statement was made recently by one of the local school boards in Acadiana, who has made CRC Screening a mandatory part of their HR package and pays the cost of colonoscopy in full to employee vs the cost of advanced CRC treatment.

PATIENT ACCEPTANCE

"The best CRC screening method is the one that the patient will do."

- **Stool testing is simple and most easily acceptable to patients – the downside is this method is not sensitive enough to detect all colon lesions**
- **The variety of screening methods requires the clinician to advise the patients of pros and cons of different types of screening so that patient can _______ before deciding what type to choose**
- **40% of the targeted population in the U.S. is currently going unscreened – alternative forms of screening should be recommended to patients not agreeable to colonoscopy**

MAXIMIZING EFFECT AND VALUE OF CRC SCREENING

❖ **Stratify Patients**

- ➢ **Standard Risk vs High Risk**
- ➢ **Age – to start and stop CRC screening**
- ➢ **Race**
- ➢ **Gender**
- ➢ **Factors that increase risk of polyps and CRC**
- ➢ **Family Hx**
- ➢ **Inflammatory Bowel Disease Hx**
- ➢ **Genetic Risk Factors**
- ➢ **Abdominal Radiation Hx**
- ➢ **Miscellaneous – HIV, sc________, renal transplant, DM, androgen de_______, alcohol abuse, obesity, smoking HX**

❖ **Recommendations for Subsequent Exams**

- **For patients previously undergoing a "High Quality" Screening**

- **Recommendations for Subsequent Exams**

  - **For patients previously undergoing a "High Quality" Screening Colonoscopy, consisting of:**
    - ✓ **High Definition Endoscopes**
    - ✓ **Adequate Prep**
    - ✓ **Dedicated Endoscopy Unit**
    - ✓ **Experienced Endoscopist**

Patients who have undergone this type of screening exam, the following guidelines are recommended for subsequent follow-up procedures:

- **Standard Risk - No Polyps - 7 to 10 years**
- **Standard Risk - Polyps - 3 to 5 years**
- **High Risk- No Polyps – 5 years**
- **High Risk – Polyps – 3 years**