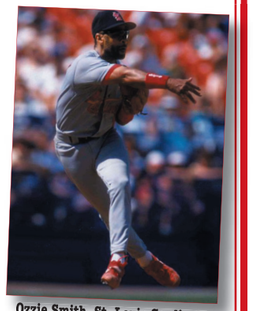
EVANSVILLE CANCER CENTER/VANTAGE ONCOLOGY & UROLOGISTS IN THE TRI-STATE AREA

PRESENT

Striking Out PROSTATE CANCER

WITH REDS FRANK ROBINSON & CARDINALS OZZIE SMITH

Frank Robinson, Cincinnati Reds & Baltimore Orioles
Prostate Cancer Survivor



Ozzie Smith, St. Louis Cardinals
MLB National Spokesperson on Prostate Cancer

Saturday, August 16th, 2008 at 2 pm

Evansville Marriott on Hwy 41

$20.00 General Admission • Bring a friend & they get in at half price ($10.00)! • $10.00 admission for anyone under the age of 16!

Autographing tickets $40 each. (Limit one autograph per each player.) Players will not be signing bats or jersey's, but photographs, flats, and baseballs are allowed.

MARK YOUR CALENDAR & BUY YOUR TICKETS NOW!

Stop by Evansville Cancer Center, 700 N. Burkhardt Road or call 812-473-8797 for tickets or more information!

■ EVANSVILLE CANCER CENTER RADIATION ONCOLOGISTS
Jon D. Frazier, M.D. & Shannon Lamb, M.D.

MEDICAL ONCOLOGIST
Rick Ballou, M.D., Ph.D.

RADIATION PHYSICISTS
Saiyid Masroor Shah, Ph.D., Yinghui Zhang, Ph.D. & Abrar Hussain, Ph.D.

■ HENDERSON CANCER CENTER - Shannon Lamb, M.D., Radiation Oncologist & Rick Ballou, M.D., Ph.D., Medical Oncologist

Evansville Cancer Center

Vantage Oncology

700 N. Burkhardt Road, Evansville, Indiana 47715

Evansville Cancer Center is the only ACRO accredited cancer facility in the entire Tri-State area!

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Oncology Update

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Spring/Summer 2008

Tracy Hagan, RN, MSN, AOCNP

Tracy is a nurse practitioner who has been practicing in the Tri-State area since 2001. She received her masters degree in nursing from Vanderbilt University. Tracy received her advanced oncology nurse practitioner certification in 2005. Her focus is in medical oncology. In addition, Tracy has been with Evansville Cancer Center since 2001 and is actively involved in the management of clinical trials for the Center.

Genetic Testing:

To Test or NOT to Test, That is the Question. Information on Testing to Help with Your Patients.

Tracy Hagan, RN, MSN, AOCNP

The impact of genetic testing /counseling on cancer prevention can be substantial not only for the individual suspected to be at risk for a particular mutation, but also for their children and other family members. Genetic testing for at risk individuals allows for informed decision making based on the mutational status of a given gene, facilitating accurate risk assessment and individualized medical/surgical management. It can also alleviate uncertainty and anxiety by providing a definitive assessment of the cancer risk associated with a particular mutation. This knowledge can be empowering to many patients by providing them with the ability to make choices regarding their cancer risk and subsequent care. *(Bosserman and Caldera, 2008)*. The American Society of Clinical Oncology (ASCO) recommends genetic testing/counseling be offered when:

1) The individual has personal or family history with features suggestive of a genetic cancer susceptibility condition,

2) The genetic test can be adequately interpreted and, the test results will aid in diagnosis or influence the medical or surgical management of the patient or family members at hereditary risk of cancer.

Identifying and managing patients at risk for hereditary cancer syndromes has become an integral part of clinical medicine. Effective management of these patients at higher risk for developing cancers requires all healthcare providers taking an active role in identifying the patient and then referring the patient to the appropriate specialists.

Breast cancer is diagnosed in approximately one in eight women, 12% of the population, in the United States *(Thull & Vogel, 2004)*. The majority of these cases are sporadic. However, 5-10% of these cases are hereditary in origin, caused by a single germline mutation that markedly increases a woman's susceptibility to develop breast cancer and ovarian cancer *(Thull & Vogel, 2004)*. Eighty to ninety percent of all hereditary breast and ovarian cancers are caused by BRCA1 and BRCA 2 gene mutations. Both BRCA 1/2 are tumor suppressor genes. These are present in all individuals and when functioning normally suppress tumor cell growth. However, in mutations individuals are at increased risk for developing breast and/or ovarian cancer. These genes are autosomal dominant; therefore an individual with a mutation has a 50% chance of passing the gene mutation along with the associated risk for developing cancer to his/her children.

BRCA1/2 mutation carriers have a 56%-87% lifetime risk of developing breast cancer in contrast to the 12% lifetime in the general population. In regards to ovarian cancer, an individual with a mutation has a 27%-44% chance

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of developing ovarian cancer *(Berry et al, 1997; Frank et al, 1998; Thompson & Easton, 2002)*. Mutations in BRCA 1/2 can also increase the risk for developing a second primary cancer. Haffty found a 42% risk over 12 years and a 49% rate of recurrence in the ipsilateral breast over 12 years *(Haffty, B. et al, Lancet, 2002)*.

The presence of specific cancers in a given patient or patient's family should serve as a red flag to alert a health care provider for the possibility of a BRCA1/2 mutation. 'Red flags' for hereditary breast and /or ovarian cancer associated with BRCA1/2 mutations are as follows:

Personal or family history

- Breast cancer before age 50
- Ovarian cancer at any age
- Bilateral breast cancer
- Both breast and ovarian cancer in an individual
- Male breast cancer at any age
- Women of Ashkenazi Jewish descent with breast or ovarian cancer at any age
- Breast cancer in two or more relatives
- A previously identified BRCA1/2 mutation in the family

Once a mutation has been identified then patients should have all their choices and options discussed. The National Comprehensive Cancer Network (NCCN) has established practice guidelines when managing a patient with a positive BRCA1/2 mutation

Women

- Breast self examination training and regular monthly BSE beginning at age 18
- Clinical breast examination, semi annually starting at age 25
- Annual mammogram and breast MRI screening beginning at age 25 or the age of earliest onset in family
- Discuss options of prophylactic mastectomy on a per patient basis and counsel regarding degree of protection, reconstruction options and risks
- Recommend salpingo-oophorectomy to reduce risk ideally between 35 and 40 years or upon completion of child bearing after discussing reproductive issues, cancer risk, degree of protection for breast and ovarian cancers and management of menopausal symptoms
- For patients who elect not to have prophylactic mastectomy, concurrent transvaginal ultrasound and CA-125 screening every 6 months beginning at age 35 or 5-10 years earlier than earliest age of first diagnosis of ovarian cancer in the family

Men

- BSE training and regular monthly practice
- Semi annual clinical breast examination, consider baseline mammography
- Adherence to NCCN screening guidelines for prostate cancer

Risk to relatives

- Advise relatives about possible inherited cancer risk and consider genetic consultation and/or testing

Colorectal cancer is the third most frequently diagnosed cancer in men and women in the United States. In 2008, an estimated 108,070 new cases of colon cancer and 40,740 new cases of rectal cancer will occur in the United States. The majority of colorectal cancers are sporadic, however; 5-10% of all colorectal cancers are part of a hereditary syndrome. The two most common hereditary colon syndromes are hereditary non-polyposis colorectal cancer (HNPCC) and familial adenomatous polyposis (FAP).

Familial adenomatous polyposis (FAP) is characterized by multiple adenomatous colonic polyps and is responsible for about 1% of all cases of colorectal cancer. It is associated with the adenomatous polyposis coli (APC) gene. It is autosomal dominant, so offspring of an individual with a mutation has a 50% chance of inheriting the mutation. An individual with FAP typically presents with hundreds to thousands of precancerous polyps developing throughout the colon and rectum. Left untreated, the polyposis can lead to development of colorectal cancer, nearly 100% of the time, with the mean age of 39 years. *(Roesser & Mullineaux, 2005)*.

Medical management of patient with a FAP diagnosis is very intense. Screening dictates that flexible sigmoidoscopy should begin at the onset of puberty and continue annually. Colonoscopy begins once polyps have been identified and prophylactic colectomy is recommended after adenomatous polyps emerge.

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Hereditary nonpolyposis colorectal caner (HNPCC) or **Lynch Syndrome** is the most common form of hereditary colorectal cancer. It is responsible for 2-7% of all diagnosed cases of colorectal cancer. It is an autosomal dominant syndrome and results in mutations in the M1H1, MSH2, MSH6 or PMS2 genes. Mutations in one of these genes does not mean that an individual will develop cancer, however, it does predispose them to developing not only colorectal cancer but other cancers such as stomach, ovarian, uterine, small intestine, liver and brain. An individual who tests positive for HNPCC with a MLH1 or MSH2 mutation has a 70-82% risk of developing colon cancer by the age of 70; a 42-61% risk for developing uterine cancer by age 70, and a 12% risk of developing ovarian cancer by age 70. Characteristics associated with HNPCC are:

- Early onset of colorectal cancer (<45 years of age)
- Diagnosis of colon polyps before age 45
- Family history of more than one of the following primary cancers in a single individual or in multiple 1st and/or 2nd degree relatives: colorectal, endometrial, ovarian, gastric, small bowel, uterine or brain.

The NCCN recommends the following for early detection/risk reduction in an individual who test positive for a HNPCC related mutation:

- Colonoscopy beginning at age 20-25 or 5-10 years younger than earliest onset of CRC, then every 1-2 years, then annually at age 40.
- Transvaginal ultrasound, CA-125, endometrial biopsy, annual Pap smear and pelvic exam beginning at age 25-35, or 5-10 years younger than earliest onset of uterine cancer, then every 1-2 years.
- Prophylactic bilateral salpingo-oophorectomy when childbearing is complete.

Hereditary melanoma accounts for approximately 10% of all melanomas. It has been shown that carriers of the p16 mutation have a markedly increased lifetime risk of developing melanoma *(Bishop, Demenais, Goldstein, et al, 2002)*. Mutations in the p16 gene are the greatest known cause of hereditary melanoma.
A 'Rules of Three' approach should be utilized when trying to identify an individual whom you might suspect of having a p16 mutation. Individuals with three melanomas in their family, individuals having three of more melanomas themselves and those having any three incidents of melanoma or pancreatic cancer in their family.

Patients who test positive for the p16 mutation require heightened surveillance. They should be taught to do a monthly self-skin examination and a healthcare provider should perform a total body skin examination every 6-12 months. In addition patients who test positive for the mutation should be referred to a pancreatic surveillance program.

Identifying and managing patients at risk for hereditary cancer syndromes has become an integral part of clinical medicine. Effective management of these patients at higher risk for developing cancers requires all healthcare providers taking an active role in identifying the patient and then referring the patient to the appropriate specialists.

Recognizing that patients (and other humans) are not always the most rational of creatures. We've instituted a process at the Evansville Cancer Center that will help them make the best of the available information. Even before the blood is drawn a nurse practitioner and psychologist review with the patient the reasons for their concerns, how they anticipate dealing with whatever news they may receive. The medical options from increased surveillance through prophylactic surgeries, the implications for further testing for children, and other potentially disrupting concerns are all discussed before the testing. The specific genetic testing is done through Myriad Laboratories, whose genetic counselors are available to the patient and to us in cases where the results are less than clear.

In the case of referrals from outside physicians we remain sensitive to the fact that these are their patients. We refer them back to the referring physician to handle the medical decision-making and referral process.

At the Evansville Cancer Center we are attuned to the need for each patient to find their best individual options, and to ensure that patients make informed decisions.

- Tracy Hagan, RN, MSN, AOCNP, Evansville Cancer Center