Oncology Nursing Society
Fort Worth Regional Chapter

www.geocities.com/fw_ons

January 2008

http://www.ons.org
866-257-4ONS, toll free

President's Corner

Happy New Year!

The parties, celebration and New Year resolutions are probably just a memory by now.

Thanks to out-going President, Kirsten Drake for her year of service to our chapter. She did an awesome job! I hope to be able to continue the projects she started and to fill her shoes.

I am looking forward to an exciting year within our chapter. My goals as chapter President for the year 2008 include an increase both in membership and attendance at our meetings. I would also like to focus on increased chapter participation in community projects that benefit our Oncology patients.

There are many facilities, both inpatient and outpatient, in our area that are not represented by our membership. I would like to see that changed. My challenge to each of you is to bring one new member into the chapter this year.

Together we can make this an exciting year for this great chapter. *Carole*

New Chapter Officers

Congratulations to our new officers. Lori Hodge is our new President Elect. Our new Membership chair is Aparna Saha. Rhonda Ford is our new Director at Large/ Program Committee Chair. Please join me in congratulating them and providing support to them in their new roles.

Officers 2008

President:Carole Wood
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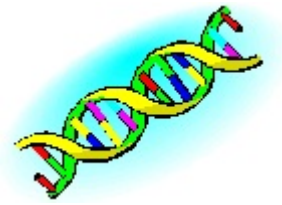
President -Elect: Lori Hodge
Secretary: Tracy Messing
tracymessing@msn.com
Treasurer: Lisa Bashore
Lisaba@cookchildrens.org
Director at Large: Rhonda Ford
Program Committee Chair - Rhonda Ford
Membership/Nominating Committee Chair - Aparna Saha
Scholarship Chair - Jenny Ellis
JennyEllis@TexasHealth.org
Newsletter editor - Judy Goldthorp
judygold47@yahoo.com

Genetics and Your Practice

Sara Pirzadeh, M.S., C.G.C.
Genetic Counselor
Moncrief Cancer Resources/UT Southwestern Medical Center



Lynch syndrome, otherwise known as hereditary non-polyposis colorectal cancer (HNPCC), is the most common hereditary colorectal cancer syndrome, accounting for 1-3% of all colorectal cancers. It is caused by mutations in the *MLH1*, *MSH2*, *MSH6*, and *PMS2* genes. Lynch syndrome is caused by *MLH1*/*MSH2* approximately 90% of the time, followed by *MSH6* (7-10%) and *PMS2* (<5%). Importantly, this syndrome causes up to an 80% lifetime risk of colorectal cancer, 40-60% uterine cancer risk, and ~10% risk of ovarian cancer (among others). This month's article will focus on identification of and screening techniques for Lynch/HNPCC.

Clinical diagnosis was originally achieved when patients fulfilled the Amsterdam criteria. These criteria can be remembered by "3-2-1":

3 or more family members with colorectal cancer or another HNPCC-related cancer (uterus, ovary, stomach, small bowel, ureter, renal pelvis, pancreas, biliary tract and glioblastoma) – one of these individuals must be a 1st degree relative of the other two;

2 successive affected generations;

1 or more individuals diagnosed before age 50;

Exclusion of familial adenomatous polyposis (FAP).

The above serves as a guide when evaluating a family history for suspicion of Lynch syndrome; however, using only these criteria for diagnosis is known to miss a large proportion of individuals who have Lynch syndrome.

Tumor analysis techniques were subsequently discovered that could further (and more accurately) screen colorectal cancer patients suspicious for gene mutations which would cause Lynch syndrome, namely, microsatellite instability (MSI) testing and immunohistochemical (IHC) staining. New criteria were established at that time to guide the use of these analyses – these are the Bethesda criteria:

- Colorectal cancer diagnosed in an individual under 50 years of age;
- Presence of synchronous or metachronous colorectal/other HNPCC-associated tumors, regardless of age;
- Colorectal cancer with MSI-high histology* diagnosed in an individual younger than age 60;
- Colorectal cancer diagnosed in one or more first-degree relatives with an HNPCC-associated tumor, with one cancer diagnosed before age 50;
- Colorectal cancer diagnosed in two or more first- or second-degree relatives of any age.

*presence of tumor infiltrating lymphocytes, Crohn's-like lymphocytic reaction, mucinous/signet-ring differentiation, or medullary growth pattern.

Ideally, MSI testing is conducted first to discover if certain genetic sequences called microsatellites have any level of instability (high or low). Tumors that exhibit MSI raise suspicion of a genetic abnormality, as the genes responsible for Lynch syndrome normally ensure stability of microsatellites in the genome. It is known that ~90% of colorectal cancers from families meeting Amsterdam criteria are MSI-high, and at least 95% of colorectal cancers from individuals with a known gene mutation causing Lynch syndrome have MSI (either high or low) as well; however, 10-15% of sporadic colorectal tumors exhibit MSI as well, which means that MSI alone cannot elucidate a diagnosis of Lynch syndrome.

When a tumor is MSI positive (preferably high), IHC staining is pursued. IHC testing examines a colorectal tumor for the gene products, or proteins, of the 4 genes currently associated with Lynch syndrome. When one of the proteins is missing, it can mean that the gene in question might have a mutation. This result then gives evidence for starting genetic testing with that particular gene instead of testing all of the genes, which confers lower testing costs.

Biochemically, we know that these genes work together; specifically, *MLH1/PMS2* and *MSH2/MSH6* work together within tissues. Regarding IHC, this means that all 4 proteins need to be examined because a loss of one protein does not only implicate that particular gene.

Recent publications have illustrated that IHC is the most sensitive screening method for patients that are suspicious for Lynch syndrome**. Current recommendations dictate that patients diagnosed with colorectal cancer who fulfill Bethesda and/or Amsterdam criteria should have IHC (or, if possible, MSI/IHC) ordered on the tumor sample. Those who exhibit MSI and/or loss of one or more of the gene products on IHC should be referred for genetic counseling/testing for Lynch syndrome.

Please feel free to call our office at (817) 838-4871 and ask any questions you may have regarding hereditary cancer risk assessment for your patients.

**NEJM 2005; 352(18): 1851-60.

What is your New Year's Resolution?

http://pittsburgh.about.com/od/holidays/tp/resolutions.htm

Some resolutions you may have made last year; will you make them again this year?

1. Spend more time with family and friends
2. Fit in fitness
3. Tame the Bulge
4. Quit Smoking
5. Enjoy Life More

6. Quit Drinking
7. Get Out of Debt
8. Learn Something New
9. Help Others
10. Get Organized___

ONS Congress
May 15-18, 2008 Philadelphia, PA
April 30 - May 3, 2009 San Antonio, TX

ONS Institutes of Learning
November 14-16, 2008 Seattle, WA
November 13-15, 2009 Tampa, FL

8th Annual Oncology Update: Advances & Controversies
January 19-23, 2008
Park City, UT
www.mdanderson.org/conferences

Current Trends in Oncology Nursing
January 18-19, 2008
Park City, UT
www.mdanderson.org/conferences

3rd Annual Oncology Nursing Symposium: Excellence through Innovation
February 22-23, 2008
Houston, TX
www.mdanderson.org/conferences