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EMBARGOED FOR RELEASE:
6:00 PM EDT, September 29, 2010

CONTACT: Susie Tappouni
571-483-1355

susie.tappouni@asco.org

– PRESSCAST WEDNESDAY, SEPTEMBER 29, 12:00 PM EDT –

STUDIES REVEAL TRENDS IN SURVIVAL, TARGETED BREAST CANCER CARE

ALEXANDRIA, Va. -- New studies on breast cancer screening, treatment, genetics and survival were released today in advance of the 2010 Breast Cancer Symposium. The symposium is being held October 1-3, 2010, at the Gaylord National Hotel in Suburban Washington, DC (National Harbor, Md.).

Four major studies were highlighted in today's presscast:

- [*Review of data over six decades shows steady improvement in breast cancer survival:*](#)
A review of patient records from a large single institution shows that breast cancer survival at 10 years after diagnosis has steadily improved over the past six decades; this improvement has been attributed to advances in early detection and more effective treatments that lower relapse risks.
- [*Mammography screening is shown to be effective in reducing breast cancer mortality in women ages 40 to 49:*](#) A large-scale Swedish study found that women who received breast mammography screening between ages 40 and 49 had a 26 percent lower risk of dying from breast cancer than those who did not have mammography.
- [*Postmenopausal patients with strongly estrogen receptor-positive breast cancers who receive preoperative treatment with an aromatase inhibitors \(AIs\) often respond to treatment and are more likely to be candidates for breast-conserving surgery \(BCS\):*](#) A multicenter randomized trial found that postmenopausal breast cancer patients with tumors that strongly expressed estrogen receptors who received 4 months of neoadjuvant AI therapy had high rates of response and often made patients who would have required a mastectomy eligible for BCS.
- [*Triple negative breast cancer \(TNBC\) patients with BRCA mutations show improved survival, lower risk of relapse:*](#) A study finds that nearly 20 percent of women with highly aggressive, difficult-to-treat TNBC carry a mutation in one of the BRCA genes, most often BRCA1, yet have a significantly lower risk of relapse and better survival than TNBC patients without mutations.

2318 MILL ROAD, SUITE 800
ALEXANDRIA, VA 22314

571-483-1300
FAX: 571-366-9530

“Women diagnosed with breast cancer today have a much better prognosis than they did fifty years ago,” said Jennifer Obel, MD, [American Society of Clinical Oncology](#) Cancer Communications Committee member. “We owe these advances to early detection, greater use of improved therapies, and a deeper understanding of the molecular basis of their disease. Our approach to breast cancer continues to evolve at a rapid pace.”

In 2010, more than 260,000 patients are expected to be diagnosed with breast cancer in the United States¹, which includes women and men with invasive and in situ breast cancer. This year’s Breast Cancer Symposium will include more than 300 abstracts and focus on a range of breast cancer issues, including advances in screening, targeted therapies, translational science and major trends in care and survival.

The fourth annual [Breast Cancer Symposium](#) is co-sponsored by the [American Society of Breast Disease](#), [The American Society of Breast Surgeons](#), the [American Society of Clinical Oncology](#), the [American Society for Radiation Oncology](#), the [National Consortium of Breast Centers](#) and the [Society of Surgical Oncology](#). *Susan G. Komen for the Cure*[®], the world's largest grassroots network of breast cancer survivors and advocates, is the primary supporter of the symposium.

Information for Media: www.asco.org/BCSpresskit10

Relevant Links on ASCO’s [Cancer.Net](#):

- [Cancer.net Guide to Breast Cancer](#)
- [Mammography – What to Expect](#)
- [Expert Perspective from ASCO on Mammography Screening for Breast Cancer](#)
- [The Genetics of Breast Cancer](#)
- [Talking With the Doctor About Breast Surgery Options](#)
- [What to Know: The ASCO and CAP Guideline on Estrogen and Progesterone Receptor Testing for Breast Cancer](#)
- [What to Know: ASCO’s Guideline on HER2 Testing for Breast Cancer](#)
- [What to Know: ASCO’s Guideline on Hormonal Therapy for Hormone Receptor-Positive Breast Cancer](#)
- [Cancer.Net Video: What’s New in Breast Cancer Care and Treatment, with Julie Gralow, MD](#)

¹ *Cancer Facts & Figures 2010*. Atlanta, GA; American Cancer Society: 2010.

**General Poster Session C
Saturday, October 2, 2010
11:45 AM-1:15 PM ET**

**Lead Author: Aman Buzdar, MD
M. D. Anderson Cancer Center
Houston, TX**

Steady Improvement in Breast Cancer Survival Seen Over Six Decades

A review of patient records from a single-institution study showed that 10-year breast cancer survival has steadily improved over the past six decades, a trend that investigators credit to improvements in detection and earlier surgeries and therapies that lower the risk of relapse.

“If patients are appropriately managed, they have a much better chance of surviving breast cancer today than they would have had 30 or 20 or even 10 years ago, because the therapies are constantly evolving and improving,” said Aman Buzdar, MD, professor of medicine and breast medical oncology at the University of Texas M. D. Anderson Cancer Center in Houston, who led the work.

Improved detection, with the advent of screening mammography, has helped find cancer at earlier stages, often resulting in better prognoses. For patients with locally advanced breast cancer, using pre-operative systemic therapies to shrink the tumor has made surgery possible for many patients deemed marginal candidates or inoperable, while adjuvant therapies can substantially change outcomes and allow many to remain disease-free.

In the study, Buzdar and his co-workers examined patient records of women with local, regional and metastatic breast cancer seen at M. D. Anderson Cancer Center between 1944 and 2004. They estimated the patients’ 10-year overall survival and survival by stage from the date they were initially seen. The data showed steady improvement in survival over six decades.

In the 60-year period, nearly 57,000 breast cancer patients were seen at M. D. Anderson, with 12,809 having their initial therapy there. The investigators divided the patients survival percentages into three general cancer stages: local, regional and distant (metastases), with a fourth category – overall survival – also listed for each decade. In each cancer stage, there was improvement from decade to decade, and in some cases, the overall changes were dramatic. Between 1944 and 1954, for example, the 10-year survival from all types of breast cancer combined was 25.1 percent. From 1995 to 2004, 10-year survival was 76.5 percent. Between 1944 and 1954, breast cancer survival from distant metastases was 3.3 percent compared to 22 percent during 1995 to 2004. Regional disease survival at 10 years was 16.2 percent from 1944 to 1954 and 74.1 percent from 1994 to 2004. Ten-year survival from local breast cancer was 55.0 percent and 86.1 percent, respectively.

Improving survival of patients with breast cancer over the past 6 decades: The University of Texas M. D. Anderson Cancer Center experience.

Buzdar, K. Hunt, T. A. Buchholz, S. H. Taylor, G. N. Hortobagyi, K. R. Hess

Background: The treatment of breast cancer has evolved over the past 60 years. Earlier efforts were focused on adequate regional control of the disease. Screening for early disease detection, increasing the number of systemic therapies with significant antitumor activity in patients with metastatic disease, and subsequent incorporation of some of these therapies in the combined modality approach of locally advanced, and operable breast cancer has resulted in better local control of the disease, and also had considerable impact on the survival of each stage of disease.

Methods: Between 1944 and 2004, 56,864 patients with breast cancer were seen at University of Texas M. D. Anderson Cancer Center. Of those, 12,809 patients had their initial therapy for breast cancer at our institution. The stage at initial presentation was tabulated according to SEER's staging system. The ten year estimated overall survival and survival by stage were calculated from the date of initial presentation, as shown in the table.

Results: (See table.)

Years	% survival at 10 years (number of patients)			
	Local	Regional	Distant	Overall*
1944-54	55.0% (120)	16.2% (191)	3.3% (92)	25.1% (410)
1955-64	56.0% (462)	23.9% (656)	4.0% (306)	30.5% (1,449)
1965-74	59.3% (440)	28.8% (566)	4.7% (321)	34.6% (1,387)
1975-84	72.0% (701)	46.9% (828)	7.4% (367)	49.3% (1,983)
1985-94	78.5% (1,036)	57.4% (1,268)	11.2% (364)	61.6% (2,927)
1995-04	86.1% (1,898)	74.1% (1,569)	22.2% (455)	76.5% (4,653)

**Also includes patients with in situ or unknown stages of the disease*

Conclusions: The data illustrate a steady improvement in survival of breast cancer patients treated at this institute in the past six decades. These improvements are achieved by early detection of disease, and incorporation of combined modality approaches in treating patients with different stages of breast cancer.

Disclosures: Nothing to disclose.

**General Poster Session A
Friday, October 1, 2010
12:00-1:30 PM ET**

**Lead Author: Håkan Jonsson, PhD
Umea University
Umea, Sweden**

Large Study Shows Mammography Screening Effective in Reducing Breast Cancer Mortality in Women Ages 40 to 49

A large, nationwide Swedish study found that women who received breast mammography screening between ages 40 and 49 had a 26 percent lower risk of dying from breast cancer than those who did not have mammography.

“The benefits from routine screening mammography for younger women have been argued since the 1980s,” said Håkan Jonsson, PhD, associate professor of cancer epidemiology at Umea University in Umea, Sweden, who led the study. “We’re hoping that large population-based studies will help provide more answers.”

Studies have shown a clear reduction in breast cancer mortality with routine mammography screening for women aged 50 and over, and more modest, but significant reduction for women aged 40 to 49. Many health organizations, including ASCO, continue to support the availability of screening for women 40 to 49 based on consultation with their doctor.

Since 1986 the Swedish government has mandated screening for all women ages 50 to 69, but left it up to individual counties to decide on offering to screen women ages 40 to 49. Roughly half of all Swedish counties chose to invite women ages 40 to 49 for mammography screening, and about half offered screening to only women who were at least 50 (current screening recommendations include women 40 to 74). In an effort to estimate the effectiveness of mammography screening on breast cancer mortality, Jonsson and his colleagues compared breast cancer deaths between counties where women 40 to 49 years of age were invited to screening (study group) and areas where women below age 50 were not invited (control group).

The researchers calculated the number of deaths related to breast cancer by looking at the national cancer register. Deaths were counted as part of the study if their diagnosis was between ages 40 to 49 and the death occurred within an average 16-year follow-up period. They found a 26 percent reduction in breast cancer mortality in the group which was invited to receive screening compared to the control group and 29 percent reduction for women who actually were screened. While there are currently 600,000 women age 40-49 in Sweden, over the course of the study – which was not randomized – more than 1 million women were involved. Among women invited for screening, there were 619 breast cancer deaths in the study group and 1,205 in the control group during the follow-up period between 1986 and 2005.

The researchers would like to retrospectively examine subgroups of women for known breast cancer risks, such as having a first-degree relative with breast cancer or giving birth for the first

time at a late age, to see if there are differences in the effectiveness of mammography screening in detecting cancer and in mortality.

Effectiveness of population-based service screening with mammography for women age 40 to 49.

H. Jonsson, B. Numan, S. W. Duffy, S. Abdsaleh, L. Björnelid, P. Bordás, L. Tabár, B. Viták, S. Zackrisson, L. Nyström

Background: Though consensus has been reached that mammography screening can reduce mortality for women aged 50-69 the effectiveness for women aged 40-49 is still questioned and few studies of the effectiveness of service screening for the age group have been made. The aim of the study was to estimate the effectiveness of service screening in the age group 40-49 on breast cancer mortality for women invited to and attending in mammography screening.

Methods: All Swedish counties were included in the study. Breast cancer mortality was compared between areas where women 40-49 years were invited to screening (study group) and areas where women below age 50 were not invited (control group). The mortality measure used was incidence-based mortality. To obtain breast cancer mortality the underlying cause of death from the national cause of death register was used as the main method but excess mortality was also used. The average follow-up was 16 years in both the study and the control group. The number of person-years was 7.3 and 8.8 million for the study group and the control group, respectively. Individual data were collected to adjust for women not invited and for non-compliance.

Results: The number of breast cancer deaths was 803 and 1,238 in the study group and the control group, respectively, during the follow-up 1986-2005. The rate ratio (RR) was 0.74 (95% CI: 0.66-0.83) for women invited to screening and 0.71 (0.62-0.80) for women actually participating. Estimation based on excess mortality gave similar results. The number of women needed to invite to screening during the age interval 40-49 to save one life was estimated to be 1,252. The mortality reduction was larger for women 45-49 than for women 40-44. The estimated RR for a period of equal length before the start of service-screening, 1970-1985, was 0.94 (0.85-1.05).

Conclusions: In this large study mammography screening for women aged 40-49 is clearly shown to be efficient for reducing breast cancer mortality.

Disclosures: Nothing to disclose.

Oral Abstract Presentation
Saturday, October 2, 2010
1:15-2:45 PM ET

Lead Author: John Olson, MD, PhD
Duke University
Durham, NC

Selecting Breast Cancer Patients for AI Therapy Based on ER Status Results in High Rates of Response, Breast Conserving Surgery

A large, multicenter, randomized Phase II trial found that selecting postmenopausal breast cancer patients for aromatase inhibitor (AI) therapy based on high estrogen receptor (ER) expression in tumors resulted in high rates of response and improvements in breast conservation surgery. Researchers found that for postmenopausal women with ER-rich tumors who are poor candidates for breast conservation therapy and are facing mastectomy, neoadjuvant (therapy given before the main treatment) AI therapy may allow women to undergo lumpectomy in 50 percent of the cases instead.

“High tumor ER levels provide a way to select patients who will do well with this [breast conservation] treatment approach,” said lead author John Olson, MD, PhD, associate professor of surgery and chief of the section of endocrine, breast and oncologic surgery at Duke University in Durham, N.C. “These results may raise awareness that neoadjuvant endocrine therapy can be an effective option for women who want a chance to have breast conserving surgery after being told mastectomy is the only surgical option at diagnosis.”

While AI therapy has previously been shown to be effective in reducing breast tumors and enabling postmenopausal women to undergo breast conserving surgery, many physicians lack experience in this approach in the United States and employ chemotherapy instead. In addition, there is uncertainty about which of the three FDA-approved AIs should be used for a definitive clinical trial that would compare chemotherapy and endocrine therapy.

In this American College of Surgeons Oncology Group (ACOSOG) study, researchers randomized the treatment of 374 postmenopausal women with clinical stage II/III ER-rich breast cancer to 16 weeks of therapy with one of three AIs: exemestane, letrozole, or anastrozole. All of the participants at the time of enrollment were poor candidates for breast conservation surgery because of large tumor size. Roughly half of the patients were judged to be marginal candidates while the other half of patients were ineligible and were only candidates for mastectomy. Four women were considered inoperable.

After 16 weeks, 70.9 percent of those who received letrozole, 66.7 percent who were given anastrozole and 60.5 percent of the patients given exemestane had partial or complete clinical responses, respectively. The progression rate was 7.3 percent for those who received anastrozole, 6.5 percent for the exemestane patients, and 4.7 percent for the letrozole group. After therapy, 82 percent (163/199) of the marginal group were able to undergo breast conservation surgery. In

addition, approximately half (77/152, or 51 percent) of the mastectomy group and 75 percent (3/4) of the inoperable group could have conservation surgery.

The investigators are now considering a Phase III study comparing chemotherapy to AI therapy to see which is more effective in reducing tumor size prior to surgery.

ACOSOG Z1031: A randomized phase II trial comparing exemestane, letrozole, and anastrozole in postmenopausal women with clinical stage II/III estrogen receptor-positive breast cancer.

J. A. Olson, G. Babiera, G. W. Unzeitig, P. K. Marcom, J. M. Guenther, K. Deshryver, D. C. Allred, V. Suman, K. Hunt, M. J. Ellis

Background: Neoadjuvant aromatase inhibitor (AI) therapy is a rational and effective approach to improving the breast conservation surgery (BCS) rate for postmenopausal patients with large, estrogen receptor (ER) rich breast cancers. Barriers to adopting this strategy include lack of experience in this management approach in the US and uncertainty regarding the comparative effectiveness of the three approved aromatase inhibitors for this indication.

Methods: ACOSOG Z1031 is a multicenter, open-label, neoadjuvant phase II screening study that randomized postmenopausal women with clinical stage II/III ER rich (Allred score 6-8) breast cancer to 16 weeks of either exemestane (EXE) - 25mg daily, letrozole (LET) - 2.5mg daily, or anastrozole (ANA) - 1 mg daily. At baseline study participants were either marginal for BCS (MBCS), candidates for mastectomy only (MO), or inoperable (IO). Planned enrolment was 125 patients per arm in order that the likelihood of the treatment with the 'best' 16-week clinical response rate (based on caliper measurements) by WHO criteria (cRR) was included among the subset of treatments with 'similar' cRR (90% power). Secondary endpoints included: surgical outcomes (BCS vs. M), radiologic and pathologic response rates.

Results: From 4/1/2006 to 10/1/2009, 377 postmenopausal women with clinical stage II or III ER rich breast cancer were enrolled. 374 women began treatment and were included in an intent-to-treat analysis. Median tumor size was 4.0 cm (range: 2-13 cm). The 16-week cRR was 60.5% (95%CI: 51.3-69.1%) for EXE; 70.9% (95% CI: 62.2-78.6%) for LET, and 66.7% (95% CI: 57.6-74.9%) for ANA. Progression was 6.5% for EXE; 4.7% for LET, and 7.3% for ANA. Seventeen patients did not have surgery due to refusal (12 pts), progression (3 pts) or other medical conditions (2 pts). The BCS rate was 82% (163/199) in MBCS group; 51% (77/152) in MO group; and 75% in IO group (3/4).

Conclusions: This large multicenter screening trial demonstrates that high response and breast conservation rates and low rates of disease progression can be achieved through patient selection for AI therapy based on high ER expression.

Disclosures: Nothing to disclose.

General Poster Session D
Saturday, October 2, 2010
6:00-7:00 PM ET

Lead Author: Ana Maria Gonzalez-Angulo, MD
M. D. Anderson Cancer Center
Houston, TX

Triple-Negative Breast Cancer Patients with BRCA Mutations Have Improved Survival, Lower Relapse Risk

A small study has found that nearly 20 percent of women with highly aggressive, difficult-to-treat, triple-negative breast cancer (TNBC) also have mutations in a BRCA gene, yet have a significantly lower risk of relapse and better survival than TNBC patients without mutations. Triple-negative breast cancers are those that lack receptors for estrogen and progesterone, as well as HER2, or human epidermal growth factor receptor 2 – all targets for effective anti-cancer therapies. The findings have implications for developing more personalized treatment strategies, and could lead to increased use of genetic testing for some of these women.

“We’ve known that women with BRCA mutations have a high rate of triple-negative breast cancer, and it’s not surprising that women with triple-negative cancer have more BRCA mutations,” said Ana Maria Gonzalez-Angulo, MD, associate professor, Breast Medical Oncology, University of Texas M. D. Anderson Cancer Center, who led the work. “But, it is surprising that there’s such a difference in survival, and it’s not clear why.”

The investigators sought to find the incidence of BRCA1 or BRCA2 mutations (both germline, or inherited, and somatic, in the tumor only) in triple-negative breast cancers and determine possible prognostic significance of the mutations for relapse-free and overall survival. They examined 77 women with triple-negative breast cancer, which included 15 (19.5 percent) who carried mutations in either BRCA1 (12, or 15.6 percent) or BRCA2 (3, or 3.9 percent).

All patients but one received treatment with anthracycline and taxane-based adjuvant chemotherapy. Patients were followed for a median of 43 months. The estimated five-year relapse-free survival was 51.7 percent for TNBC patients without BRCA mutations compared to 86.2 for mutation carriers. Similarly, the estimated five-year overall survival was 52.8 percent for patients lacking mutations and 73.3 for mutation carriers.

The researchers called the results unexpected because previous studies failed to show any differences in survival. According to Gonzalez-Angulo, “the findings could have therapeutic implications for TNBC patients because a class of DNA repair-inhibiting drugs, PARP inhibitors, appears to be more effective in patients with BRCA mutations.” At the same time, the findings may lead to an increase in genetic testing to identify TNBC patients with BRCA1 mutations, which could provide useful information for prognosis and therapy selection.

Incidence and outcome of BRCA mutation carriers with triple receptor-negative breast cancer (TNBC).

M. Gonzalez-Angulo, H. Chen, K. Timms, J. K. Litton, J. Potter, J. S. Lanchbury, B. Arun, G. N. Hortobagyi, K. Do, F. Meric-Bernstam

Background: The aim of this study was to investigate the incidence of deleterious germline and somatic mutations in BRCA1/2 in an unselected series of patients with TNBC, and somatic mutations in BRCA1/2, and to determine the prognostic significance of carrying a mutation with respect to relapse-free survival (RFS) and overall survival (OS).

Methods: DNA was obtained from primary breast cancers of 77 patients with TNBC diagnosed between 1987 and 2006 at our institution. BRCA1/2 exons/flanking regions were sequenced. Patients were classified as BRCA mutation carriers or wild type (WT). Patient characteristics were tabulated and compared between the groups with chi-square tests. RFS and OS were estimated according to the Kaplan-Meier method and compared among groups with the log-rank statistic. Cox proportional hazards models were fit to determine the association of mutation status with the risk of recurrence and death after adjustment for other patient and disease characteristics.

Results: Median age was 51 years (range 27-83 years). Of the 77 patients identified, 15 (19.5%) were mutations carriers: 12 (15.6%) in BRCA1, one of them somatic, and 3 (3.9%) in BRCA2. Compared to WT, BRCA mutation carriers tended to be younger, ($p = 0.005$). Nuclear grade, histology, and pathology stage were not significantly associated with mutation status. All patients but one, received anthracycline and taxane based adjuvant chemotherapy. At a median follow-up of 43 months (7-214 months), there were 33 (42.9%) recurrences and 35 (45.5%) deaths. Two patients died without relapse. 5-year RFS estimates were 51.7% for WT patients versus 86.2% for mutation carriers, ($p = 0.031$); and 5-year OS estimates were 52.8% for WT patients versus 73.3% for mutation carriers, ($p = 0.225$). After adjustment for other patient characteristics, patients with BRCA mutations had a significantly better RFS (HR: 0.19, 95% CI: 0.045-0.79, $p = 0.016$) compared to WT patients.

Conclusions: In this unselected cohort of patients with TNBC, we found a 19.5% incidence of BRCA mutations. Genetic testing should be discussed with patients with TNBC. Patients with TNBC with BRCA mutations have a significantly lower risk of relapse.

Disclosures: **Kirsten Timms, PhD**, Consultant or Advisory Role, Stock Ownership, Honoraria, Research Funding, and Other Remuneration from Myriad Genetics; **Jennifer Potter**: Consultant or Advisory Role, Stock Ownership, Honoraria, Research Funding, and Other Remuneration from Myriad Genetics; **Jerry S. Lanchbury, PhD**: Consultant or Advisory Role, Stock Ownership, Honoraria, Research Funding, and Other Remuneration from Myriad Genetics.