

Is a shift in the management of male breast cancer needed?

Men with breast cancer are treated differently from women with the same disease, as they undergo a much higher use of mastectomy and a lower use of radiation therapy.

Rachel Rabinovitch and colleagues at the University of Colorado School of Medicine (CO, USA) recently published the results of a retrospective study on the different treatment modalities used for men and women with breast cancer in the past 40 years in the *International Journal of Radiation Oncology Biology and Physics*.

The authors used the Surveillance, Epidemiology and End Results database for the analysis and evaluated all the available cases of primary invasive breast cancer, considering age, race, grade, stage, estrogen and progesterone receptor status, type of surgery and use of radiation therapy.

As expected, male breast cancer had a very low incidence, representing only 0.6% of cases of breast cancer in the database. When comparing male and female

breast cancer, the authors observed that mastectomy was used in 87.4% of cases in men versus 38.3% in women; instead, breast-preserving surgery was used only in 12.6 % of cases in men with breast cancer versus 52.6 % in women with the disease. Rabinovitch added that: "We also identified lower use of postmastectomy radiation for advanced breast cancer in men, compared to women. The indications for radiation in this setting are no different than in women, so it is unclear why this is so."

The authors further stated that: "The data from this study supports use of breast conservation in men with early-stage breast cancer. Outcomes with lumpectomy/radiation were equivalent to mastectomy in this group. The oncology community has not traditionally considered 'breast conservation' for men and it is time to re-evaluate our approach. The advantages are a much smaller scar, shorter surgical procedure, no drains associated with surgery and potential cosmetic/psychosexual benefits. We

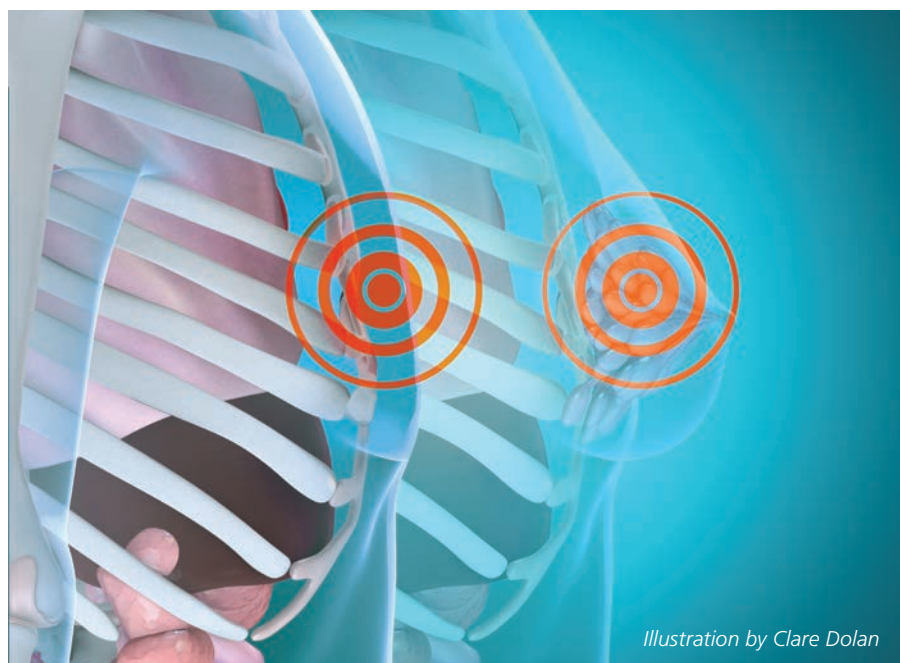


Illustration by Clare Dolan



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live in a time where many men are much more body conscious, when it is socially acceptable for men to be seen in public without a shirt on.”

The results of the study highlight the need for a shift in the management of breast cancer in men because mastectomy does not seem to be always necessary. Moreover Rabinovitch concluded that: “This study should raise awareness about the appropriateness of offering breast

conservation to men with early stage breast cancer. The psychosexual impact of a mastectomy in men is an area worthy of research.”

– Written by Marco De Ambrogi

Source: Fields EC, Dewitt P, Fisher CM, Rabinovitch R. Management of male breast cancer in the United States: a surveillance, epidemiology and end results analysis. *Int. J. Radiat. Oncol. Biol. Phys.* 87(4), 747–752 (2013).



Study finds that hospitalized pregnant women are more likely to suffer from venous thromboembolism

Researchers based at the University of Nottingham (Nottingham, UK) and Guy's and St Thomas' Foundation Trust (London, UK) have found that pregnant women admitted to hospital for reasons other than delivery have an increased risk of venous thromboembolism (VTE).

The authors of the study, published in the *British Medical Journal*, explained how, to their knowledge, “this is the first study to assess the impact of antepartum hospitalization on the incidence of VTE during pregnancy.”

VTE is reported to affect approximately 1–2 pregnancies in every 1000 women and in developed countries it is one of the leading causes of maternal mortality. The researchers aimed to assess the risk of first VTE onset in pregnant women who were hospitalized, and compare those with rates of VTE in women who were not admitted to hospital. The team studied primary and secondary care records of 206,785 women aged between 15–44 years, who had one or more pregnancies from 1997–2010. These women had no prior history of VTE. To assess risk, the absolute rate of VTE was compared to the rates that were observed during a follow-up period not associated with hospitalization. A Poisson regression

model was used to estimate incidence rate ratios.

The research team found that women who were hospitalized during pregnancy were associated with an excess risk of 16.6 cases per 1000 person-years when compared with time outside hospital (17.5-fold increase in risk). They also found an increased risk of 5.8 cases per 1000 person-years in the 28 days after discharge, with VTE events most likely to occur in the third trimester of pregnancy and in women aged 35 years and over.

The results of the study also demonstrated that women who were hospitalized for less than 3 days, when compared with time outside hospital, had an increased risk of 4.6 cases per 1000 person-years. By contrast, women hospitalized for 3 days or more had an increased risk of 14.1 cases per 1000 person-years. The research team had observed that the results were similar when taking other factors associated with VTE into consideration.

The results of this first-of-a-kind study allow the researchers to suggest that women hospitalized during pregnancy “should receive careful consideration” in terms of deciding who should receive thromboprophylaxis.

“The results of this ... study ... suggest that women hospitalized during pregnancy “should receive careful consideration” in terms of deciding who should receive thromboprophylaxis.”

– Written by Simi Thankaraj

Source: Abdul Sultan A, West J, Tata LJ, Fleming KM, Nelson-Piercy C, Grainge MJ. Risk of first

venous thromboembolism in pregnant women in hospital: population based cohort study from England. *BMJ* doi:10.1136/bmj.f6099. (2013) (Epub ahead of print); Press release: Study finds high

clot risk for women admitted to hospital during pregnancy: <http://company.bmj.com/content/study-finds-high-clot-risk-women-admitted-hospital-during-pregnancy>



A genetic biomarker for colorectal cancer could reduce the need for invasive testing

Colorectal cancer is the most common form of cancer in developed countries; therefore a biomarker that could reduce the need for invasive testing would benefit many patients. Rima Rozen (McGill University, Quebec, Canada) and colleagues may have identified such a marker, as recent research demonstrated a genetic change in the colon mucosa of colorectal cancer patients.

The investigators distinguished five possible genetic biomarkers which were abnormal in a mouse model of colon cancer. These were then confirmed to also be abnormal in humans using tissue gained from patients suffering from colon cancer. Rozen reported, “Not only did this show that our

mouse model mimics the human disease, but more importantly, it identified genes that could be used for colorectal cancer diagnosis.”

“Colorectal cancer is the most common form of cancer ... a biomarker that could reduce the need for invasive testing would benefit many patients.”

The abnormal genes were identified not only in colon cells at the tumor site, but also in seemingly normal cells from other areas of the colon. This may allow for tissues samples to be taken from more accessible areas of the GI tract or even stool, commented Rozen. The interesting

results from this study, published in *Cancer Prevention Research*, could lead to the earlier diagnosis of patients both less invasively and more accurately.

Rozen concluded, “This new method could help to avoid false negative findings, which can occur in 10–15% of endoscopic procedures. The key is using the right genes. I believe the ones we have identified are good candidates.”

– Written by Elizabeth Webb

Source: McGill University press release: MUHC researchers identify biomarkers that could lead to early diagnosis of colorectal cancer: <http://muhc.ca/newsroom/news/muhc-researchers-identify-biomarkers-could-lead-early-diagnosis-colorectal-cancer>



Racial differences in blood clotting pathway indicated

A new study suggests that racial differences in the pathophysiology of atherothrombosis may impact the way that treatments work. The study found that platelets from black donors clotted faster and to a greater extent than those from white donors, in response to thrombin, a naturally occurring clotting agent. The finding highlights the need for a closer look at prescribing heart attack medication and suggests further work on individualizing treatments is needed.

Antiplatelet medications are often prescribed to prevent heart attack and stroke. They work by inhibiting clotting, which

reduces the likelihood that a blood clot will block a vessel in the heart or brain, leading to heart attack or stroke, respectively. However, it is known that there is discrepancy between races in the response to these medications, and the findings of the recently published *Nature Medicine* study, may go some way to explaining this difference.

Lead researcher Paul Bray, from Thomas Jefferson University (PA, USA), and his team, studied PAR4-mediated platelet activation in both healthy black (n = 70) and white (n = 84) patients,

whose self-reported race was confirmed with genetic testing. They found that numerous differentially expressed RNAs were associated with both race and platelet-activating receptor reactivity, specifically PAR4. Higher levels of the protein PC-TP in black subjects were found to contribute to the difference in PAR4-mediated platelet activation.

“We may need to consider our patient's race when using certain heart disease therapies,” Bray commented. “In this age, where there is such a focus on delivering personalized medicine, we should embrace

these differences to try to give our patients better care."

– Written by Laura McGuinness

Source: Edelstein LC, Simon LM, Montoya RT *et al.* Racial differences in human platelet PAR4 reactivity reflect expression of PCTP and miR-376c. *Nat. Med.* doi:10.1038/nm.3385 (Epub ahead of print) (2013).



Can a new breath test help detect lung cancer?

At the American College of Chest Physicians annual meeting (CHEST 2013; Chicago, IL, USA), Peter Mazzone (Cleveland Clinic, OH, USA) presented preliminary evidence that an exhaled biomarker for lung cancer could be used in the clinical setting. "We believe that cancer cells release a unique chemical signature related to the tumor-growing process," commented Mazzone. "We are currently developing a breath-based test based on the results of our research."

The research involved 82 patients suffering from lung cancer, who had not received treatment, and compared these to 155 control individuals who presented

benign lung nodules or were at risk of developing lung cancer. The investigation required participants to breathe normally, with exhaled breath being analyzed by a high-dimensional chemical sensor known as a colorimetric sensor array. This sensor detected various chemicals in the breath, which were reported as color changes on the array. The pattern of color change represented whether lung cancer markers were present.

"We believe that cancer cells release a unique chemical signature related to the tumor-growing process..."

The results of the study demonstrated that the colorimetric sensor array accurately identified individuals with lung cancer from the controls. Michael Baumann (president-elect of the American College of Chest Physicians) concluded, "Lung cancer is the leading cause of cancer death in the United States. We welcome the cutting-edge research that can help in diagnosis and treatment of this devastating illness."

– Written by Elizabeth Webb

Source: American College of Chest Physicians press release: Exhaled Breath Biomarker May Detect Lung Cancer: <http://2013.chestmeeting.chestnet.org/Meeting-Information/Press-Room/Exhaled-Breath-Biomarker>



Better use of blood pressure guidelines recommended

A study recently published in *Circulation* recommends that current guidelines for preventing heart disease using blood-pressure-lowering medications could be improved. The study claims that the one-size-fits-all approach used by the current guidelines is not the most effective, and indicates that individualizing treatment by considering a number of different factors for each patient would be preferable.

"Drugs that lower blood pressure are among the most effective and commonly

used medications in the country, but we believe they can be used dramatically more effectively," explains lead author Jeremy Sussman, from the University of Michigan (Ann Arbor, MI, USA).

In the study, the authors recommend that options for preventative medication should take into account multiple risk factors for each patient, such as age, gender and whether or not the patient smokes.

At present, treatment guidelines emphasize specific blood pressure goals, with

the majority of treatment specifically aimed at reducing blood pressure below 140/80 mmHg. However, the authors suggest that a more tailored approach to blood pressure treatment decisions considering the patient's overall cardiovascular disease risk as well as the estimated benefits of advancing treatment would be a much better model of care.

"The purpose of these medications is not actually to avoid high blood pressure itself but to stop heart attacks, strokes and other cardiovascular diseases. We

should guide use of medications by a patient's risk of these diseases and how much adding a new medication decreases that risk – not solely on their blood pressure level. We found that people who have mildly high blood pressure but high cardiovascular risk receive a lot of benefit from treatment, but those with low overall cardiovascular risk do not,” Sussman elaborates.

– Written by Laura McGuinness

Source: Sussman J, Vijan S, Hayward R. Using benefit-based tailored treatment to improve the use of antihypertensive medications *Circulation* doi:10.1161/CIRCULATIONAHA.113.002290 (Epub ahead of print) (2013); ‘Smarter’ blood pressure guidelines could prevent heart attacks, strokes: *ScienceDaily*: <http://www.sciencedaily.com/releases/2013/11/131104162350.htm> (Accessed 15th November 2013)

About the News

The News highlights some of the most important events and research. If you have newsworthy information, please contact: Laura McGuinness, Commissioning Editor, *Clinical Practice*

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