

Table of Contents

Clinical Breast Cancer

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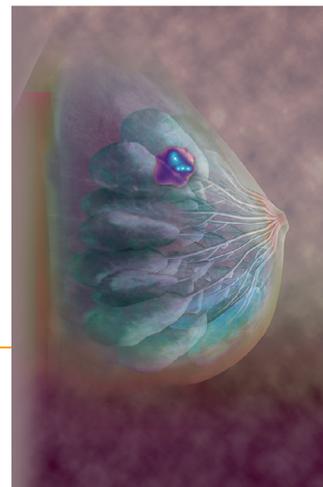


Illustration by Erin Moore

Reviews

499 RUNX1 as a Novel Molecular Target for Breast Cancer

Nur Syamimi Ariffin

507 Cancer Stem Cells and Circulatory Tumor Cells Promote Breast Cancer Metastasis

RamaRao Malla, Kiran Puvalachetty, Rahul K. Vempati, Rakshmitha Marni, Neha Merchant, Ganji Purnachandra Nagaraju

Interplay of cancer stem cells, exosomes, and circulatory tumor cells in breast cancer has been discussed. Cancer stem cells communicate with stromal and immune cells to promote metastasis. Tumor-derived exosomes induce the epithelial mesenchymal transition (EMT) involved in metastasis. Circulatory tumor cells are disseminated by interacting with stromal and immune cells.

Original Studies

515 The benefit of superb microvascular imaging and shear wave elastography in differentiating metastatic axillary lymphadenopathy from lymphadenitis

Hande Uslu, Mesude Tosun

Although cervical lymph nodes have been a popular subject in previous studies, comparison of the diagnostic performance of SMI and SWE in axillary lymph nodes has been neglected. Therefore, our purpose here is to detect and compare the diagnostic performances of VI via SMI and SWE in axillary lymphadenitis and metastatic axillary LNs. Our results showed that combined grayscale ultrasonography evaluation of lymph nodes with SWE and SMI increase the diagnostic performance in distinguishing lymphadenitis-metastatic LAP.

521 Identification of Breast Cancer Subtypes Based on Gene Expression Profiles in Breast Cancer Stroma

Md. Nazim Uddin, Xiaosheng Wang

538 Tumor Immune Microenvironment and Response to Neoadjuvant Chemotherapy in Hormone Receptor/HER2+ Early Stage Breast Cancer

Rami S. Vanguri, Kathleen M. Fenn, Matthew R. Kearney, Qi Wang, Hua Guo, Douglas K. Marks, Christine Chin, Claire F. Alcus, Julia B. Thompson, Cheng-Shiun Leu, Hanina Hibshoosh, Kevin M. Kalinsky, James C. Mathews, Saad Nadeem, Travis J. Hollmann, Eileen P. Connolly

We studied the tumor microenvironment in patients with HER2 positive early breast cancer treated in the neoadjuvant setting. We evaluated associations of pathologist-assessed stromal tumor infiltrating lymphocyte counting, quantitative multiplex immunofluorescence, and RNA-based gene pathway signatures with pathologic complete response. Our results show significant associations between immune cell densities and their spatial organization with pathologic response.

- 547 Treatment Patterns in Women Age 80 and Over With DCIS: A Report From the National Cancer Database**
Julia Frebault, Carmen Bergom, Chandler S. Cortina, Monica E. Shukla, Yiwen Zhang, Chiang-Ching Huang, Amanda L. Kong
This study uses the National Cancer Database to examine treatment patterns and survival outcomes in women age ≥ 80 with ductal carcinoma in situ (DCIS). Overall survival was improved in those who received surgery, demonstrating the importance of surgical resection even with increasing age.
- 553 Risk Factors for the Development of Clinical and Subclinical Lymphedema Detected by Bioimpedance Spectroscopy**
Mutlay Sayan, Sarah S. Kilic, Irina Vergalaso, Imraan Jan, Firas Eladoumikhachi, Bruce Haffty, Shicha Kumar, Nisha Ohri
The treatment of breast cancer can cause lymphedema, which greatly impact patients' quality of life. Earlier treatment of lymphedema is more effective, but preclinical lymphedema is difficult to detect. We used a new tool, bioimpedance spectroscopy, to detect preclinical lymphedema. This tool may allow physicians to intervene on lymphedema early, before patients develop irreversible symptoms.
- 560 Relationship Between Breast Density, Breast Cancer Subtypes, and Prognosis**
Daisuke Yamada, Sachiko Ohde, Yuka Kajiuira, Kazuyo Yagishita, Fumi Nozaki, Koyu Suzuki, Naoki Kanomata, Hideko Yamauchi, Hiroko Tsunoda
The relationship between breast density, breast cancer subtype, and prognosis is unclear. We examined the connection between breast cancer subtypes and breast composition in 1258 women with breast cancer who underwent mammography and obtained a pathological diagnosis. There was no association between breast composition and breast cancer subtype. Treatment decision should be based on cancer subtype, not breast density.
- 567 Expression Pattern and Prognostic Significance of Chemokines in Breast cancer: An Integrated Bioinformatics Analysis**
Umar Mehraj, Bader Alshehri, Azmat Ali Khan, Ajaz A. Bhat, Puneet Bagga, Nissar Ahmad Wani, Manzoor Ahmad Mir
Chemokines, low molecular weight cytokines are central to the trafficking of immune cells, stromal modulation, and inflammation. Recent studies have demonstrated an intricate connection between chemokines and tumor metastasis. In the present study, we evaluated the expression pattern and prognostic significance of chemokines in BC and found significant deregulation in chemokine expression. Also, the chemokine expression pattern was associated with the prognosis of BC patients. Enrichment analysis and functional analysis revealed the involvement of chemokines in BC tumorigenicity via NF κ B and TLR pathways. High deregulation of chemokines in BC points towards their involvement in BC tumorigenesis and may prove as novel therapeutic targets to treat metastatic BC.
- 579 Elevated CA 15.3 in Newly Diagnosed Breast Cancer: A Retrospective Study**
Jannes Heylen, Kevin Punie, Ann Smeets, Patrick Neven, Caroline Weltens, Annouschka Laenen, Hans Wildiers
In this study, the relationship between baseline elevated serum CA 15.3 (> 30 kU/L) and the prevalence of primary or secondary metastatic disease in breast cancer is examined. A total of 894 breast cancer patients were included, median follow-up time was 74 months: 38% had primary metastatic disease, 15% developed secondary metastatic disease during followup.

588 An Analysis of the Evidence Informing Clinical Practice Guidelines in the Management and Treatment of Breast Cancer

Kelsey Snider, Ty Moore, Corbin Walters, Travis Brachtenbach, William Woods, Micah Hartwell, Trevor Torgerson, Shelby Rauh, Matt Vassar

We assessed the methodological quality of reporting within systematic reviews underpinning evidence in breast cancer clinical practice guidelines. We analyzed 5 CPGs containing 1,341 total references, containing 69 being unique SRs. The reporting quality within systematic reviews varies, as one-third were of "critically low" quality. Improved reporting allows clinicians to have increased confidence in the guidelines, and thus increased utilization in clinical decision making.

601 Real-World Treatment Patterns and Outcomes of Palbociclib Plus an Aromatase Inhibitor for Metastatic Breast Cancer: Flatiron Database Analysis

Debra Patt, Xianchen Liu, Benjamin Li, Lynn McRoy, Rachel M. Layman, Adam Brufsky

Of 813 real-world patients with HR+/HER2⁻-metastatic breast cancer, 87% initiated palbociclib at 125 mg/d and 11% discontinued due to toxicity. Median progression-free survival and time to chemotherapy were 20.0 and 36.6 months, respectively. Palbociclib initiation at 125 mg/d (vs. lower doses) was associated with improved outcomes. These findings may help clinical decision-making in patients with advanced breast cancer.

611 Characterization of Weakly Hormone Receptor (HR)-Positive, HER2-Negative Breast Cancer and Current Treatment Strategies

Johanna E. Poterala, Thomas Havighurst, Kari Braun Wisinski

This retrospective study reviewed the pathologic complete response (pCR) following neoadjuvant chemotherapy in 64 patients with weak hormone receptor-positive (HR) and HER2-negative breast cancer. The pCR in this population resembled rates seen in triple negative breast cancer more so than strong HR + disease. Increased pCR in this population may provide important prognostic information. Clinical trials should be developed to focus on this unique patient cohort.

619 A Comparative Study of Drain in Oncoplastic Breast Conserving Surgery (Therapeutic Mammoplasty and Chest Wall Perforator Flap Partial Breast Reconstruction) vs. Mastectomy

Ian Samir Yep Manzano, Amit Agrawal

Increasingly, breast surgery is day-case or 23-hour stay surgery occasionally limited by drain management issues. Drain usage comparison in 188 patients (2014-2019) revealed longer hospital stay in all 3 cohorts studied: partial breast reconstruction (0.93 vs. 0.45 day, $P = .009$), mammoplasty (1.57 vs. 1.00 day, $P = .07$), and mastectomy (1.08 vs. 0.927 day, $P = .685$). Overall, there was temporal decrease allowing more day cases.