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1
The American Cancer Society challenge goal to reduce US cancer mortality by 50% between 1990 and 2015: Results and reflections.
Byers, T.; Wender, R.C.; Jemal, A.; Baskies, A.M.; Ward, E.E.; Brawley, O.W.
Vol. 66 Nr. 5 Página: 359 - 69 Fecha de publicación: 01/09/2016
CA Cancer J Clin 2016;66:359-369. © 2016 American Cancer Society
Resumen:
In 1996, the Board of Directors of the American Cancer Society (ACS) challenged the United States to reduce what looked to be possible peak cancer mortality in 1990 by 50% by the year 2015. This analysis examines the trends in cancer mortality across this 25-year challenge period from 1990 to 2015. In 2015, cancer death rates were 26% lower than in 1990 (32% lower among men and 22% lower among women). The 50% reduction goal was more fully met for the cancer sites for which there was enactment of effective approaches for prevention, early detection, and/or treatment. Among men, mortality rates dropped for lung cancer by 45%, for colorectal cancer by 47%, and for prostate cancer by 53%. Among women, mortality rates dropped for lung cancer by 8%, for colorectal cancer by 44%, and for breast cancer by 39%. Declines in the death rates of all other cancer sites were substantially smaller (13% among men and 17% among women). The major factors that accounted for these favorable trends were progress in tobacco control and improvements in early detection and treatment. As we embark on new national cancer goals, this recent past experience should teach us that curing the cancer problem will require 2 sets of actions: making new discoveries in cancer therapeutics and more completely applying those discoveries in cancer prevention we have already made.

2
American Joint Committee on Cancer acceptance criteria for inclusion of risk models for individualized prognosis in the practice of precision medicine.
Kattan, M.W.; Hess, K.R.; Amin, M.B.; Lu, Y.; Moons, K.G.; Gershenwald, J.E.; Gimotty, P.A.; Guinney, J.H.; Halabi, S.; Lazar, A.J.; Mahar, A.L.; Patel, T.; Sargent, D.J.; Weiser, M.R.; Compton, C.; members of the AJCC Precision Medicine, C.o.re
Vol. 66 Nr. 5 Página: 370 - 4 Fecha de publicación: 01/09/2016
CA Cancer J Clin 2016;66:370-374. © 2016 American Cancer Society
Resumen:
The American Joint Committee on Cancer (AJCC) has increasingly recognized the need for more personalized probabilistic predictions than those delivered by ordinal staging systems, particularly through the use of accurate risk models or calculators. However, judging the quality and acceptability of a risk model is complex. The AJCC Precision Medicine Core conducted a 2-day meeting to discuss characteristics necessary for a quality risk model in cancer patients. More specifically, the committee established inclusion and exclusion criteria necessary for a risk model to potentially be endorsed by the AJCC. This committee reviewed and discussed relevant literature before creating a checklist unique to this need of AJCC risk model endorsement. The committee identified 13 inclusion and 3 exclusion criteria for AJCC risk model endorsement in cancer. The emphasis centered on performance metrics, implementation clarity, and clinical relevance. The facilitation of personalized probabilistic predictions for cancer patients holds tremendous promise, and these criteria will hopefully greatly accelerate this process. Moreover, these criteria might be useful for a general audience when trying to judge the potential applicability of a published risk model in any clinical domain.

3
Human papillomavirus vaccination guideline update: American Cancer Society guideline endorsement.
Saslow, D.; Andrews, K.S.; Manassaram-Baptiste, D.; Loomer, L.; Lam, K.E.; Fisher-Borne, M.; Smith, R.A.; Fontham, E.T.; American Cancer Society Guideline Development, G.r.oup
Vol. 66 Nr. 5 Página: 375 - 85 Fecha de publicación: 01/09/2016
CA Cancer J Clin 2016;66:375-385. © 2016 American Cancer Society.
Resumen:
Answer questions and earn CME/CNE The American Cancer Society (ACS) reviewed and updated its guideline on human papillomavirus (HPV) vaccination based on a methodologic and content review of the Advisory Committee on Immunization Practices (ACIP) HPV vaccination recommendations. A literature review was performed to supplement the evidence considered by the ACIP and to address new vaccine formulations and recommendations as well as new data on population outcomes since publication of the 2007 ACS guideline. The ACS Guideline Development Group determined that the evidence supports ACS endorsement of the ACIP recommendations, with one qualifying statement related to late vaccination. The ACS recommends vaccination of all children at ages 11 and 12 years to protect against HPV infections that lead to several cancers and precancers. Late vaccination for those not vaccinated at the recommended ages should be completed as soon as possible, and individuals should be informed that vaccination may not be effective at older ages.

4
Cancer treatment and survivorship statistics, 2016.
Miller, K.D.; Siegel, R.L.; Lin, C.C.; Mariotto, A.B.; Kramer, J.L.; Rowland, J.H.; Stein, K.D.; Alteri, R.; Jemal, A.
Vol. 66 Nr. 4 Página: 271 - 89 Fecha de publicación: 01/07/2016
CA Cancer J Clin 2016;66:271-289. © 2016 American Cancer Society.
Resumen:
The number of cancer survivors continues to increase because of both advances in early detection and treatment and the aging and growth of the population. For the public health community to better serve these survivors, the American Cancer Society and the National Cancer Institute collaborate to estimate the number of current and future cancer survivors using data from the Surveillance, Epidemiology, and End Results cancer registries. In addition, current treatment patterns for the most prevalent cancer types are presented based on information in the National Cancer Data Base and treatment-related side effects are briefly described. More than 15.5 million Americans with a history of cancer were alive on January 1, 2016, and this number is projected to reach more than 20 million by January 1, 2026. The 3 most prevalent cancers are prostate (3,306,760), colon and rectum (724,690), and melanoma (614,460) among males and breast (3,560,570), uterine corpus (757,190), and colon and rectum (727,350) among females. More than one-half (56%) of survivors were diagnosed within the past 10 years, and almost one-half (47%) are aged 70 years or older. People with a history of cancer have unique medical and psychosocial needs that require proactive assessment and management by primary care providers. Although there are a growing number of tools that can assist patients, caregivers, and clinicians in navigating the various phases of cancer survivorship, further evidence-based resources are needed to optimize care.

5
The impact of comorbidity on cancer and its treatment.
Sarfati, D.; Koczwara, B.; Jackson, C.
Vol. 66 Nr. 4 Página: 337 - 50 Fecha de publicación: 01/07/2016
CA Cancer J Clin 2016;66:337-350. © 2016 American Cancer Society.
Resumen:
Answer questions and earn CME/CNE Comorbidity is common among cancer patients and, with an aging population, is becoming more so. Comorbidity potentially affects the development, stage at diagnosis, treatment, and outcomes of people with cancer. Despite the intimate relationship between comorbidity and cancer, there is limited consensus on how to record, interpret, or manage comorbidity in the context of cancer, with the result that patients who have comorbidity are less likely to receive treatment with curative intent. Evidence in this area is lacking because of the frequent exclusion of patients with comorbidity from randomized controlled trials. There is evidence that some patients with comorbidity have potentially curative treatment unnecessarily modified, compromising optimal care. Patients with comorbidity have poorer survival, poorer quality of life, and higher health care costs. Strategies to address these issues include improving the evidence base for patients with comorbidity, further development of clinical tools to assist decision making, improved integration and coordination of care, and skill development for clinicians.

6
Cancer screening, prevention, and treatment in people with mental illness.
Weinstein, L.C.; Stefancic, A.; Cunningham, A.T.; Hurley, K.E.; Cabassa, L.J.; Wender, R.C.
Vol. 66 Nr. 2 Página: 133 - 151 Fecha de publicación: 01/03/2016
CA Cancer J Clin 2016;66:133-151. © 2015 American Cancer Society.
Resumen:
Answer questions and earn CME/CNE People with mental illness die decades earlier in the United States compared with the general population. Most of this disparity is related to preventable and treatable chronic conditions, with many studies finding cancer as the second leading cause of death. Individual lifestyle factors, such as smoking or limited adherence to treatment, are often cited as highly significant issues in shaping risk among persons with mental illness. However, many contextual or systems-level factors exacerbate these individual factors and may fundamentally drive health disparities among people with mental illness. The authors conducted an integrative review to summarize the empirical literature on cancer prevention, screening, and treatment for people with mental illness. Although multiple interventions are being developed and tested to address tobacco dependence and obesity in these populations, the evidence for effectiveness is quite limited, and essentially all prevention interventions focus at the individual level. This review identified only one published article describing evidence-based interventions to promote cancer screening and improve cancer treatment in people with mental illness. On the basis of a literature review and the experience and expertise of the authors, each section in this article concludes with suggestions at the individual, interpersonal, organizational, community, and policy levels that may improve cancer prevention, screening, and treatment in people with mental illness.

7
Cancer statistics, 2016.
Siegel, R.L.; Miller, K.D.; Jemal, A.
Vol. 66 Nr. 1 Página: 7 - 30 Fecha de publicación: 01/01/2016
CA Cancer J Clin 2016;7-30. © 2015 American Cancer Society.
Resumen:
Each year, the American Cancer Society estimates the numbers of new cancer cases and deaths that will occur in the United States in the current year and compiles the most recent data on cancer incidence, mortality, and survival. Incidence data were collected by the National Cancer Institute (Surveillance, Epidemiology, and End Results [SEER] Program), the Centers for Disease Control and Prevention (National Program of Cancer Registries), and the North American Association of Central Cancer Registries. Mortality data were collected by the National Center for Health Statistics. In 2016, 1,685,210 new cancer cases and 595,690 cancer deaths are projected to occur in the United States. Overall cancer incidence trends (13 oldest SEER registries) are stable in women, but declining by 3.1% per year in men (from 2009-2012), much of which is because of recent rapid declines in prostate cancer diagnoses. The cancer death rate has dropped by 23% since 1991, translating to more than 1.7 million deaths averted through 2012. Despite this progress, death rates are increasing for cancers of the liver, pancreas, and uterine corpus, and cancer is now the leading cause of death in 21 states, primarily due to exceptionally large reductions in death from heart disease. Among children and adolescents (aged birth-19 years), brain cancer has surpassed leukemia as the leading cause of cancer death because of the dramatic therapeutic advances against leukemia. Accelerating progress against cancer requires both increased national investment in cancer research and the application of existing cancer control knowledge across all segments of the population.

8
American Cancer Society/American Society of Clinical Oncology Breast Cancer Survivorship Care Guideline.
Runowicz, C.D.; Leach, C.R.; Henry, N.L.; Henry, K.S.; Mackey, H.T.; Cowens-Alvarado, R.L.; Cannady, R.S.; Pratt-Chapman, M.L.; Edge, S.B.; Jacobs, L.A.; Hurria, A.; Marks, L.B.; LaMonte, S.J.; Warner, E.; Lyman, G.H.; Ganz, P.A.
Vol. 66 Nr. 1 Página: 43 - 73 Fecha de publicación: 01/01/2016
CA Cancer J Clin 2016;43-73. © 2015 American Cancer Society.
Resumen:
Answer questions and earn CME/CNE The purpose of the American Cancer Society/American Society of Clinical Oncology Breast Cancer Survivorship Care Guideline is to provide recommendations to assist primary care and other clinicians in the care of female adult survivors of breast cancer. A systematic review of the literature was conducted using PubMed through April 2015. A multidisciplinary expert workgroup with expertise in primary care, gynecology, surgical oncology, medical oncology, radiation oncology, and nursing was formed and tasked with drafting the Breast Cancer Survivorship Care Guideline. A total of 1073 articles met inclusion criteria; and, after full text review, 237 were included as the evidence base. Patients should undergo regular surveillance for breast cancer recurrence, including evaluation with a cancer-related history and physical examination, and should be screened for new primary breast cancer. Data do not support performing routine laboratory tests or imaging tests in asymptomatic patients to evaluate for breast cancer recurrence. Primary care clinicians should counsel patients about the importance of maintaining a healthy lifestyle, monitor for post-treatment symptoms that can adversely affect quality of life, and monitor for adherence to endocrine therapy. Recommendations provided in this guideline are based on current evidence in the literature and expert consensus opinion. Most of the evidence is not sufficient to warrant a strong evidence-based recommendation. Recommendations on surveillance for breast cancer recurrence, screening for second primary cancers, assessment and management of physical and psychosocial long-term and late effects of breast cancer and its treatment, health promotion, and care coordination/practice implications are made.

9
Translating cancer genomes and transcriptomes for precision oncology.
Roychowdhury, S.; Chinnaiyan, A.M.
CA Cancer J Clin 2016;75-88. © 2015 American Cancer Society.
Vol. 66 Nr. 1 Página: 75 - 88 Fecha de publicación: 01/01/2016
Resumen:
Understanding the molecular landscape of cancer has facilitated the development of diagnostic, prognostic, and predictive biomarkers for clinical oncology. Developments in next-generation DNA sequencing technologies have increased the speed and reduced the cost of sequencing the nucleic acids of cancer cells. This has unlocked opportunities to characterize the genomic and transcriptomic landscapes of cancer for basic science research through projects like The Cancer Genome Atlas. The cancer genome includes DNA-based alterations, such as point mutations or gene duplications. The cancer transcriptome involves RNA-based alterations, including changes in messenger RNAs. Together, the genome and transcriptome can provide a comprehensive view of an individual patient's cancer that is beginning to impact real-time clinical decision-making. The authors discuss several opportunities for translating this basic science knowledge into clinical practice, including a molecular classification of cancer, heritable risk of cancer, eligibility for targeted therapies, and the development of innovative, genomic-based clinical trials. In this review, key applications and new directions are outlined for translating the cancer genome and transcriptome into patient care in the clinic.

10
American Cancer Society Colorectal Cancer Survivorship Care Guidelines.
El-Shami, K.; Oeffinger, K.C.; Erb, N.L.; Willis, A.; Bretsch, J.K.; Pratt-Chapman, M.L.; Cannady, R.S.; Wong, S.L.; Rose, J.; Barbour, A.L.; Stein, K.D.; Sharpe, K.B.; Brooks, D.D.; Cowens-Alvarado, R.L.
Vol. 65 Nr. 6 Página: 427 - 55 Fecha de publicación: 01/11/2015
CA Cancer J Clin 2015;65:427-455. © 2015 American Cancer Society.
Resumen:
Answer questions and earn CME/CNE Colorectal cancer (CRC) is the third most common cancer and third leading cause of cancer death in both men and women and second leading cause of cancer death when men and women are combined in the United States (US). Almost two-thirds of CRC survivors are living 5 years after diagnosis. Considering the recent decline in both incidence and mortality, the prevalence of CRC survivors is likely to increase dramatically over the coming decades with the increase in rates of CRC screening, further advances in early detection and treatment and the aging and growth of the US population. Survivors are at risk for a CRC recurrence, a new primary CRC, other cancers, as well as both short-term and long-term adverse effects of the CRC and the modalities used to treat it. CRC survivors may also have psychological, reproductive, genetic, social, and employment concerns after treatment. Communication and coordination of care between the treating oncologist and the primary care clinician is critical to effectively and efficiently manage the long-term care of CRC survivors. The guidelines in this article are intended to assist primary care clinicians in delivering risk-based health care for CRC survivors who have completed active therapy.

11
Cancer statistics: Breast cancer in situ.
Ward, E.M.; DeSantis, C.E.; Lin, C.C.; Kramer, J.L.; Jemal, A.; Kohler, B.; Brawley, O.W.; Gansler, T.
Vol. 65 Nr. 6 Página: 481 - 95 Fecha de publicación: 01/11/2015
CA Cancer J Clin 2015;65:481-495. © 2015 American Cancer Society.
Resumen:
An estimated 60,290 new cases of breast carcinoma in situ are expected to be diagnosed in 2015, and approximately 1 in 33 women is likely to receive an in situ breast cancer diagnosis in her lifetime. Although in situ breast cancers are relatively common, their clinical significance and optimal treatment are topics of uncertainty and concern for both patients and clinicians. In this article, the American Cancer Society provides information about occurrence and treatment patterns for the 2 major subtypes of in situ breast cancer in the United States-ductal carcinoma in situ and lobular carcinoma in situ-using data from the North American Association of Central Cancer Registries and the 13 oldest Surveillance, Epidemiology, and End Results registries. The authors also present an overview of in situ breast cancer detection, treatment, risk factors, and prevention and discuss research needs and initiatives.

12
Breast-Cancer Tumor Size, Overdiagnosis, and Mammography Screening Effectiveness.
Welch, H.G.; Prorok, P.C.; O'Malley, A.J.; Kramer, B.S.
Vol. 375 Nr. 15 Página: 1438 - 1447 Fecha de publicación: 13/10/2016
NEW ENGLAND JOURNAL OF MEDICINE
Resumen:
Background The goal of screening mammography is to detect small malignant tumors before they grow large enough to cause symptoms. Effective screening should therefore lead to the detection of a greater number of small tumors, followed by fewer large tumors over time. Methods We used data from the Surveillance, Epidemiology, and End Results (SEER) program, 1975 through 2012, to calculate the tumor-size distribution and size-specific incidence of breast cancer among women 40 years of age or older. We then calculated the size-specific cancer case fatality rate for two time periods: a baseline period before the implementation of widespread screening mammography (1975 through 1979) and a period encompassing the most recent years for which 10 years of follow-up data were available (2000 through 2002). Results After the advent of screening mammography, the proportion of detected breast tumors that were small (invasive tumors measuring <2 cm or in situ carcinomas) increased from 36% to 68%; the proportion of detected tumors that were large (invasive tumors measuring =2 cm) decreased from 64% to 32%. However, this trend was less the result of a substantial decrease in the incidence of large tumors (with 30 fewer cases of cancer observed per 100,000 women in the period after the advent of screening than in the period before screening) and more the result of a substantial increase in the detection of small tumors (with 162 more cases of cancer observed per 100,000 women). Assuming that the underlying disease burden was stable, only 30 of the 162 additional small tumors per 100,000 women that were diagnosed were expected to progress to become large, which implied that the remaining 132 cases of cancer per 100,000 women were overdiagnosed (i.e., cases of cancer were detected on screening that never would have led to clinical symptoms). The potential of screening to lower breast cancer mortality is reflected in the declining incidence of larger tumors. However, with respect to only these large tumors, the decline in the size-specific case fatality rate suggests that improved treatment was responsible for at least two thirds of the reduction in breast cancer mortality. Conclusions Although the rate of detection of large tumors fell after the introduction of screening mammography, the more favorable size distribution was primarily the result of the additional detection of small tumors. Women were more likely to have breast cancer that was overdiagnosed than to have earlier detection of a tumor that was destined to become large. The reduction in breast cancer mortality after the implementation of screening mammography was predominantly the result of improved systemic therapy.

13
To be young, Black, and living with breast cancer: a systematic review of health-related quality of life in young Black breast cancer survivors.
Samuel, C.A.; Pinheiro, L.C.; Reeder-Hayes, K.E.; Walker, J.S.; Corbie-Smith, G.; Fashaw, S.A.; Woods-Giscombe, C.; Wheeler, S.B.
Vol. 160 Nr. 1 Página: 1 - 15 Fecha de publicación: 01/11/2016
BREAST CANCER RESEARCH AND TREATMENT
Resumen:
PURPOSE: Compared with young White women, young Black women are more likely to present with aggressive breast cancer (BC) subtypes that are potentially linked to worse health-related quality of life (HRQOL); however, there is limited consensus regarding HRQOL needs among young Black BC survivors. Employing Ferrell's framework on QOL in BC (i.e., physical, psychological, social, and spiritual well-being), we conducted a systematic review on HRQOL among Black BC survivors aged <50 years and proposed recommendations for advancing HRQOL research and care for this population. METHODS: Literature searches were conducted in MEDLINE/PubMed, EMBASE, CINAHL, and PsycINFO to identify relevant articles published from 1995 to 2015. Abstracts and full-text articles were screened using predetermined inclusion/exclusion criteria and evaluated for quality. RESULTS: A total of 2533 articles were identified, but six met eligibility criteria. Most studies examined multiple HRQOL domains, with the psychological domain most represented. Compared with their older, White, and BC-free counterparts, young Black BC survivors reported greater fear of dying, unmet supportive care needs, financial distress, and lower physical/functional well-being. However, spiritual well-being appeared favorable for young Black survivors. Research gaps include the absence of longitudinal studies and under-representation of studies examining physical, social, and particularly, spiritual HRQOL in young Black BC survivors. CONCLUSIONS: Young Black BC survivors generally experience suboptimal HRQOL after BC diagnosis. As few studies have reported on HRQOL among this group, future research and oncology care should prioritize young Black women in ways that recognize their unique concerns, in order to ensure better HRQOL outcomes both during and after treatment.

14
The relationship between time to initiation of adjuvant chemotherapy and survival in breast cancer: a systematic review and meta-analysis.
Raphael, M.J.; Biagi, J.J.; Kong, W.; Mates, M.; Booth, C.M.; Mackillop, W.J.
Vol. 160 Nr. 1 Página: 17 - 28 Fecha de publicación: 01/11/2016
BREAST CANCER RESEARCH AND TREATMENT
Resumen:
BACKGROUND: It is known that adjuvant chemotherapy improves survival in women with breast cancer. It is not known whether the interval between surgery and the initiation of chemotherapy influences its effectiveness. PURPOSE: To determine the relationship between time to initiation of adjuvant chemotherapy and survival in women with breast cancer, through a systematic review of the literature and meta-analysis. METHODS: Systematic review of MEDLINE, EMBASE, Cochrane Database of Systematic Reviews, Cochrane Database of Controlled Trials, Google Scholar, and abstracts presented at major international oncology conferences. The primary meta-analysis included only high-validity studies which directly measured the time from surgery to initiation of adjuvant chemotherapy and which controlled for major prognostic factors. Outcomes reported in the original studies were converted to a regression coefficient (ß) and standard error corresponding to a 4-week delay in the initiation of chemotherapy. These relative risks were combined in both fixed- and random-effects models. Homogeneity was assessed by the Cochran ? (2) statistic and the I (2) statistic. Potential publication bias was investigated using standard error-based funnel plots. RESULTS: Meta-analysis of 8 high-validity studies demonstrated that a 4-week increase in TTAC was associated with a significant increase in the risk of death in both the fixed-effects model (RR 1.04; 95 % CI, 1.01-1.08) and random-effects model (RR 1.08; 95 % CI, 1.01-1.15). The association remained significant when the most highly weighted studies were sequentially removed from this analysis, and also when additional, lower validity studies were included in this analysis. Funnel plots showed no significant asymmetry to suggest publication bias.
CONCLUSIONS: Increased waiting time from surgery to initiation of adjuvant chemotherapy is associated with a significant decrease in survival. Avoidance of unnecessary delays in the initiation of adjuvant chemotherapy has the potential to save the lives of many women with breast cancer.

15
Trends and variation in the use of nipple-sparing mastectomy for breast cancer in the United States.
Sisco, M.; Kyrillos, A.M.; Lapin, B.R.; Wang, C.E.; Yao, K.A.
Vol. 160 Nr. 1 Página: 111 - 120 Fecha de publicación: 01/11/2016
BREAST CANCER RESEARCH AND TREATMENT
Resumen:
PURPOSE: For many women, nipple-sparing mastectomy (NSM) provides aesthetic and quality-of-life outcomes superior to skin-sparing mastectomy. Accumulating data suggest that NSM provides similar oncologic outcomes in select breast cancer patients. This study sought to determine national trends in NSM use. METHODS: Using the National Cancer Data Base, 6254 women with breast cancer who underwent NSM between 2010 and 2013 were identified. NSM rates were determined relative to the number of patients who received a mastectomy with reconstruction (n = 114,849). Associations between patient, tumor, and facility characteristics and NSM were assessed using logistic regression. RESULTS: The rate of NSM increased from 2.9 to 8.0 % between 2010 and 2013. NSM was most commonly performed in academic (adjusted odds ratio [OR] 1.43, p < 0.001) and high-volume (OR 1.59, p < 0.001) breast centers. There was up to a 5.8-fold variation in its delivery between geographic census regions (p < 0.001). Of 1231 hospitals, only 491 (39.9 %) reported performing at least one NSM during the study period. Half of all NSMs were performed by the top 6 % (n = 30) of NSM-performing centers. NSM was associated with small tumor size (p < 0.001), lower tumor grades (p < 0.05), and negative nodal status (p < 0.001). However, half of NSM patients had at least one tumor characteristic that diverged from current (2016) NCCN recommendations for the procedure.
CONCLUSIONS: The use of therapeutic NSM is increasing dramatically in the United States, despite recommendations that the procedure be used with caution. As NSM becomes increasingly common, efforts are needed to monitor its long-term oncologic outcomes and to ensure equitable access to it.

16
Long-term outcome in young women with breast cancer: a population-based study.
Fredholm, H.; Magnusson, K.; Lindström, L.S.; Garmo, H.; Fält, S.E.; Lindman, H.; Bergh, J.; Holmberg, L.; Pontén, F.; Frisell, J.; Fredriksson, I.
Vol. 160 Nr. 1 Página: 131 - 143 Fecha de publicación: 01/11/2016
BREAST CANCER RESEARCH AND TREATMENT
Resumen:
PURPOSE: Whether young age at diagnosis of breast cancer is an independent risk factor for death remains controversial, and the question whether young age should be considered in treatment decisions is still to be answered. METHODS: From a population-based cohort of 22,017 women with breast cancer, all women <35 years (n = 471) were compared to a random sample of 700 women aged 35-69 years from the same cohort. Information on patient and tumor characteristics, treatment, and follow-up was collected from the medical records. Tissue microarrays were produced for analysis of classical biomarkers. Breast cancer-specific survival (BCSS), distant disease-free survival (DDFS), and locoregional recurrence-free survival (LRFS) by age were compared using women 50-69 years as reference. RESULTS: At 10 years follow-up, women <35 years and 35-39 years had a worse BCSS [age <35 years 69 % (HR 2.75, 95 % CI 1.93-3.94), age 35-39 years 76 % (HR 2.33, 95 % CI 1.54-3.52), age 40-49 years 84 % (HR 1.53, 95 % CI 0.97-2.39), and age 50-69 years 89 % (reference)]. The worse BCSS was statistically significant in stages I-IIa and Luminal B tumors. At multivariate analysis age <35 years and 35-39 years confined a risk in LRFS (HR 2.13, 95 % CI 1.21-3.76 and HR 1.97, 95 % CI 1.06-3.68) but not in DDFS and BCSS. In the subgroup of women <40 years with luminal tumors stage I-IIa, low age remained an independent risk factor also in DDFS (HR 1.87, 95 % CI 1.03-3.44).
CONCLUSION: Young women have a high risk of systemic disease even when diagnosed in an early stage. The excess risk of relapse is most pronounced in Luminal B tumors, where low age is an independent prognostic factor of DDFS and LRFS.

17
Ten-year survival in women with primary stage IV breast cancer.
Eng, L.G.; Dawood, S.; Sopik, V.; Haaland, B.; Tan, P.S.; Bhoo-Pathy, N.; Warner, E.; Iqbal, J.; Narod, S.A.; Dent, R.

Vol. 160 Nr. 1 Página: 145 - 152 Fecha de publicación: 01/11/2016
BREAST CANCER RESEARCH AND TREATMENT
Resumen:
PURPOSE: To evaluate breast cancer-specific survival at 10 years in patients who present with primary stage IV breast cancer, and to determine whether survival varies with age of diagnosis. METHODS: We retrieved the records of 25,323 women diagnosed with primary stage IV breast cancer in the surveillance, epidemiology, and end results 18 registries database from 1990 to 2012. For each case, we extracted information on age at diagnosis, tumour size, nodal status, oestrogen receptor status, progesterone receptor status, ethnicity, cause of death and date of death. The Cox proportional hazards model was used to estimate the unadjusted and adjusted hazard ratio (HR) of death due to stage IV breast cancer, according to age group. RESULTS: Among 25,323 women with stage IV breast cancer, 2542 (10.0 %) were diagnosed at age 40 or below, 5562 (22.0 %) were diagnosed between ages 41 and 50 and 17,219 (68.0 %) were diagnosed between ages 51 and 70. After a mean follow-up of 2.2 years, 16,387 (64.7 %) women died of breast cancer (median survival 2.3 years). The ten-year actuarial breast cancer-specific survival rate was 15.7 % for women ages 40 and below, 14.9 % for women ages 41-50 and 11.7 % for women ages 51 to 70 ($p < 0.0001$). In an adjusted analysis, the risk of death from breast cancer at 10 years was significantly lower for women ages 40 and below (HR 0.78; 95 % CI 0.74-0.82; $p < 0.0001$) and for women ages 41-50 (HR 0.82; 95 % CI 0.79-0.85; $p < 0.0001$), compared to women ages 51-70.
CONCLUSIONS: Approximately 13 % of women with primary stage IV breast cancer survive 10 years after diagnosis. Women diagnosed with stage IV breast cancer before age 50 have better survival at 10 years compared to older women.

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Young adult breast cancer patients have a poor prognosis independent of prognostic clinicopathological factors: a study from the Japanese Breast Cancer Registry.

Kataoka, A.; Iwamoto, T.; Tokunaga, E.; Tomotaki, A.; Kumamaru, H.; Miyata, H.; Niikura, N.; Kawai, M.; Anan, K.; Hayashi, N.; Masuda, S.; Tsugawa, K.; Aogi, K.; Ishida, T.; Masuoka, H.; Iijima, K.; Kinoshita, T.; Nakamura, S.; Tokuda, Y.
Vol. 160 Nr. 1 Página: 163 - 172 Fecha de publicación: 01/11/2016
BREAST CANCER RESEARCH AND TREATMENT
Resumen:
PURPOSE: The aim of this study was to investigate whether young age at onset of breast cancer is an independent prognostic factor in patients from the Japanese Breast Cancer Registry, after adjustment of known clinicopathological prognostic factors. METHODS: Of the 53,670 patients registered between 2004 and 2006 and surveyed after a 5-year follow-up prognosis, 25,898 breast cancer patients (48.3 %), who were obtained prognostic data, were examined. Clinicopathological factors were compared between young adult (YA; <35 years), middle-aged adult (MA; 35-50 years), and older adult (OA; >50 years) patients. Five-year disease-free survival (DFS) and overall survival (OS) rates were studied. RESULTS: YA patients were associated with an advanced TNM stage and aggressive characteristics (e.g. human epidermal growth factor receptor 2 (HER2)-positive or oestrogen receptor (ER)-negative breast cancers) compared to MA and OA patients ($P < 0.001$). The 5-year DFS and OS rates were 79.4 % and 90.8, 88.5 and 95.0 %, and 87.8 % and 91.6 % for YA, MA, and OA patients, respectively. From the multivariable regression analysis, young age at onset was confirmed as an independent prognostic factor for both DFS (hazard ratio 1.73, 95 % confidence interval 1.42-2.10; $P < 0.001$) and OS (hazard ratio 1.58, 95 % confidence interval 1.16-2.15; $P = 0.004$).
CONCLUSIONS: Young age at onset is an independent negative prognostic factor in breast cancer. Further studies are required to develop new therapeutic strategies for YA breast cancer patients.

19

Analysis of the breast cancer methylome using formalin-fixed paraffin-embedded tumour.

Wong, E.M.; Joo, J.E.; McLean, C.A.; Baglietto, L.; English, D.R.; Severi, G.; Wu, H.C.; Terry, M.B.; Hopper, J.L.; Milne, R.L.; Giles, G.G.; Southey, M.C.
Vol. 160 Nr. 1 Página: 173 - 180 Fecha de publicación: 01/11/2016
BREAST CANCER RESEARCH AND TREATMENT
Resumen:
PURPOSE: Aberrant DNA methylation occurs frequently in breast carcinogenesis. Tools for translational epigenetic studies of breast cancer involving formalin-fixed paraffin-embedded (FFPE) human tissues have now been developed. Few studies have measured genome-wide methylation in DNA derived from paraffin-embedded tumour tissues and compared the DNA methylation in corresponding adjacent non-tumour ductal epithelium (ADJNT). These studies are technically challenging due to the spectrum of breast cancer pathologies, the variable suitability of DNA extracted from FFPE material and the difficulties in identifying ADJNT. We assessed the suitability of FFPE breast cancer material for genome-wide DNA methylation assessment of tumour and ADJNT. METHODS: Twenty-one archival breast tumour tissues with paired ADJNT obtained from separate blocks and at least 2 cm from the tumour were sourced from The Melbourne Collaborative Cohort Study (MCCS). DNA was prepared from macrodissected tissue samples and assessed for genome-wide methylation using the Infinium HumanMethylation450 Beadchip (HM450K) array. RESULTS: The 1000 most differentially methylated probes between tumour and ADJNT in this FFPE-derived dataset differentiated tumour and ADJNT in The Cancer Genome Atlas Network data (TCGA; derived from high molecular weight DNA using the same HM450K array).
CONCLUSIONS: Large-scale studies of genome-wide DNA methylation using FFPE breast cancer specimens offer the opportunity to further refine the pathological classification of tumours, to include subtypes that are underrepresented in the TCGA data and provide the capacity to further explore intratumoural heterogeneity.

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EMSY copy number variation in male breast cancers characterized for BRCA1 and BRCA2 mutations.

Navazio, A.S.; Rizzolo, P.; Silvestri, V.; Valentini, V.; Zelli, V.; Zanna, I.; Masala, G.; Bianchi, S.; Tommasi, S.; Palli, D.; Ottini, L.
Vol. 160 Nr. 1 Página: 181 - 186 Fecha de publicación: 01/11/2016
BREAST CANCER RESEARCH AND TREATMENT
Resumen:
PURPOSE: Male breast cancer (MBC) is a rare disease that shares some similarities with female breast cancer (FBC). Like FBC, genetic susceptibility to MBC can be referred to mutations in BRCA1 and, particularly, BRCA2 genes. However, only about 10 % of MBCs are caused by BRCA1/2 germline mutations, while the largest part are sporadic cancers and may derive from somatic alterations. EMSY, a BRCA2 inactivating gene, emerged as a candidate gene involved in the pathogenesis of sporadic FBC, and its amplification was suggested to be the somatic counterpart of BRCA2 mutations. Considering the relevant role of BRCA2 in MBC, we aimed at investigating the role of EMSY gene copy number variations in male breast tumors. METHODS: EMSY copy number variations were analyzed by quantitative real-time PCR with TaqMan probes in a selected series of 75 MBCs, characterized for BRCA1/2 mutations. RESULTS: We reported EMSY amplification in 34.7 % of MBCs. A significant association emerged between EMSY amplification and BRCA1/2 mutations ($p = 0.03$). We identified two amplification subgroups characterized by low and high amplification levels, with BRCA2-related tumors mostly showing low EMSY amplification.
CONCLUSIONS: Our results show a high frequency of EMSY amplification in MBC, thus pointing to a role of EMSY in the pathogenesis of this disease. EMSY amplification may be a new feature that might uncover underlying molecular pathways of MBCs and may allow for the identification of MBC subgroups with potential clinical implication for targeted therapeutic approaches.

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Cost-effectiveness analysis of 1st through 3rd line sequential targeted therapy in HER2-positive metastatic breast cancer in the United States.

Diaby, V.; Adunlin, G.; Ali, A.A.; Zeichner, S.B.; de Lima Lopes, G.; Kohn, C.G.; Montero, A.J.
Vol. 160 Nr. 1 Página: 187 - 196 Fecha de publicación: 01/11/2016
BREAST CANCER RESEARCH AND TREATMENT
Resumen:
PURPOSE: Based on available phase III trial data, we performed a cost-effectiveness analysis of different treatment strategies that can be used in patients with newly diagnosed HER2-positive metastatic breast cancer (mBC). PATIENTS AND METHODS: We constructed a Markov model to assess the cost-effectiveness of four different HER2 targeted treatment sequences in patients with HER2-positive mBC treated in the U.S. The model followed patients weekly over their remaining life expectancies. Health states considered were progression-free survival (PFS) 1st to 3rd lines, and death. Transitional probabilities were based on published phase III trials. Cost data (2015 US dollars) were captured from the U.S. Centers for Medicare and Medicaid Services (CMS) drug payment table and physician fee schedule. Health utility data were extracted from published studies. The outcomes considered were PFS, OS, costs, QALYs, the incremental cost per QALY gained ratio, and the net monetary benefit. Deterministic and probabilistic sensitivity analyses assessed the uncertainty around key model parameters and their joint impact on the base-case results. RESULTS: The combination of trastuzumab, pertuzumab, and docetaxel (THP) as first-line therapy, trastuzumab emtansine (T-DM1) as second-line therapy, and lapatinib/capecitabine third-line resulted in 1.81 QALYs, at a cost of $335,231.35. The combination of trastuzumab/docetaxel as first line without subsequent T-DM1 or pertuzumab yielded 1.41 QALYs, at a cost of $175,240.69. The least clinically effective sequence (1.27 QALYs), but most cost-effective at a total cost of $149,250.19, was trastuzumab/docetaxel as first-line therapy, T-DM1 as second-line therapy, and trastuzumab/lapatinib as third-line therapy.
CONCLUSION: Our results suggest that THP as first-line therapy, followed by T-DM1 as second-line therapy, would require at least a 50 % reduction in the total drug acquisition cost for it to be considered a cost-effective strategy.

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Histomorphological Factors Predicting the Response to Neoadjuvant Chemotherapy in Triple-Negative Breast Cancer.

Jung, Y.Y.; Hyun, C.L.; Jin, M.S.; Park, I.A.; Chung, Y.R.; Shim, B.; Lee, K.H.; Ryu, H.S.
Vol. 19 Nr. 3 Página: 261 - 267 Fecha de publicación: 01/09/2016
BREAST CANCER RESEARCH AND TREATMENT
Resumen:
PURPOSE: There is no standard targeted therapy for the treatment of triple-negative breast cancer (TNBC). Therefore, its management heavily depends on adjuvant chemotherapy. Using core needle biopsy, this study evaluated the histological factors of TNBC predicting the response to chemotherapy. METHODS: One hundred forty-three TNBC patients who received single-regimen neoadjuvant chemotherapy (NAC) with the combination of doxorubicin, cyclophosphamide, and docetaxel were enrolled. The core needle biopsy specimens acquired before NAC were used to analyze the clinicopathologic variables and overall performance of the predictive model for therapeutic response. RESULTS: Independent predictors of pathologic complete response after NAC were found to be higher number of tumor infiltrating lymphocytes ($p=0.007$), absence of clear cytoplasm ($p=0.008$), low necrosis ($p=0.018$), and high histologic grade ($p=0.039$). In the receiver operating characteristics curve analysis, the area under curve for the combination of these four variables was 0.777.
CONCLUSION: The present study demonstrated that a predictive model using the above four variables can predict therapeutic response to single-regimen NAC with the combination of doxorubicin, cyclophosphamide, and docetaxel in TNBC. Therefore, adding these morphologic variables to clinical and genomic signatures might enhance the ability to predict the therapeutic response to NAC in TNBC.

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