

## Trends in the use of neoadjuvant chemotherapy for advanced-stage ovarian cancer: A National Cancer Data Base study

**Objectives:** To examine the use of neoadjuvant chemotherapy (NACT) for advanced-stage ovarian cancer over time.

**Methods:** The National Cancer Data Base (NCDB) was used to identify women with advanced-stage (stage III/IV) ovarian cancer who received chemotherapy and debulking surgery from 2003 to 2012, and the annual proportion of women who received NACT was calculated. Join point regression was used to assess trends in annual frequency. Overall differences over the study period were compared between the first and last year using the  $\chi^2$  test.

**Results:** The study sample included 37,448 women, with 27,387 at stage III (73.9%) and 9,680 at stage IV (26.1%). Between 2003 and 2012, the frequency of NACT increased from 7.2% to 20.3% and from 17.3% to 39.0% among women with stage III and stage IV disease, respectively. Frequency of NACT among women with stage III cancer remained constant from 2003 to 2008 ( $P = .06$  for trend), and increased annually by 17.0% (95% CI 9.2–25.3,  $P = .002$ ) between 2008 and 2012 ( $P = .03$  for change of trend). Among women with stage IV cancer, the frequency of NACT increased steadily throughout the study period (annual percentage change, 8.9%, 95% CI 7.4–10.4,  $P < .001$ ). In addition, the frequency of NACT use increased among all age groups during the study period, but the rise in frequency varied by age group. The risk difference for patients younger than 50 years was 11.1 (CI 7.6–14.6); between 50 and 59 years, 12.4 (CI 9.3–15.5); between 60 and 69 years, 16.5 (CI 13.2–19.7); and age 70 or older, 19.3 (CI 15.8–22.8).

**Conclusions:** The use of NACT has increased for advanced-stage ovarian cancer from 2003 to 2012. This rise in frequency was more pronounced with increasing age. NACT use increased steadily for stage IV disease, whereas for stage III disease, an inflection point was seen in 2008 when the rate of increase of NACT use increased significantly.

