

Title:

Smoking and mortality in women diagnosed with breast cancer – a systematic review with meta-analysis based on 400.944 breast cancer cases.

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Background:

It is evident that smoking is causing disease and increased mortality in general. Recently published data are now suggesting that smoking might increase both the overall mortality in women diagnosed with breast cancer but also increase their risk of dying from breast cancer.

Methods:

A systematic review and meta-analysis on smoking status in women diagnosed with breast cancer, their mortality rate and cause of death. Based on all published cohort studies published within the last ten years.

Results:

Twelve studies met our inclusion criteria, reporting on 400 944 women diagnosed with primary invasive breast cancer. Hazard Ratio (HR) for breast cancer associated death in former smokers was 1.02 [0.93, 1.12] and for current smokers 1.28 [1.17, 1.41] when compared to never smokers. Looking at all-cause death the HR for former smokers was 1.12 [1.04, 1.19], and for current smokers 1.52 [1.32, 1.76] when compared to never smokers.

Conclusions:

This large systematic review and meta-analysis found that **current** smoking in breast cancer patients was associated with a higher mortality rate compared to breast cancer patients that are never smokers. This was statistically significant for both breast-cancer related mortality and all-cause mortality. **Former** smoking was also associated with a statistically significant increase in all-cause mortality, but no increase was found in breast cancer associated mortality.

Looking at breast cancer associated deaths, a 30% increase in mortality was seen in those who were current smokers compared to never smokers. Breast cancer associated mortality in former smokers was equal to the one found in never smokers. These results could indicate that breast cancer patients ceasing to smoke can lower their risk of dying from their breast cancer disease dramatically, and possibly regain the risk of a never smoker.