

# SECULAR TREND OF BREAST CANCER MORTALITY AND SCREENING PROGRAMS IN EAST ASIAN POPULATIONS (HONG KONG, JAPAN, R. KOREA, SINGAPORE, TAIWAN)

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## Introduction

Breast cancer mortality has been declining in western countries for decades. In the 1980s, after it was shown in Sweden that mammography screening could lead to reduced breast cancer mortality, other European countries started to establish screening programs.

In Asian populations, breast cancer mortality increased until recently in China, Japan, R. of Korea, Taiwan.

## Background:

Breast cancer mortality is rising in most Asian female populations, but little is known about long-term trends. Because of the low breast cancer incidence rates in Hong Kong, Singapore, Taiwan, population-based screening programs were not recommended until the early 1990s. Taiwan started mammography screening for high risk groups in 1995, whereas Japan, Korea, Singapore started organized mammography screening programs in the early 2000s. In Hong Kong, screening is done by voluntary (“opportunistic”) mammography.

## Purpose:

We reviewed the recent available data on breast cancer mortality in Hong Kong, Japan, Korea, Singapore, Taiwan attempted to describe the secular trend of breast cancer mortality changing patterns. We also summarized the current breast cancer screening practices in those regions so that we could gain some clues about the impact of various screening programs on the breast cancer mortality rate.

## Methods:

To detect significant changes in breast cancer mortality the most recent available data were extracted from the WHO mortality database for Hong Kong (1979-2005), Japan (1950-2006), Korea (1985-2006), Singapore (1963-2006) from the Taiwan cancer registry for Taiwan (1964-2007). We applied the joinpoint regression using Joinpoint software, version 3.3 (Surveillance Research Program, U.S. National Cancer Institute) based on the Poisson assumption. We used the default settings allowed a maximum of 3 joinpoints.

## Results:

After 1990, breast cancer mortality tended to decrease slightly in Singapore Hong Kong with a greater decline for women aged under 70 in Singapore. In Japan Taiwan, the rates gradually increased up to recent years the estimated annual percent change for women aged under 70 decreased. Rates are increasing most rapidly in Korea, in all age groups. We attributed the main changes of breast cancer mortality to birth cohort effects (such as risk factor prevalence) of the early 1900s for Hong Kong, the 1930s for Singapore, the 1950s for Japan, the 1960s for Taiwan, the 1960s later for Korea.

In the beginning of the 2000s for women aged 40 or over, organized screening programs were launched in

Singapore (mammography) in Japan, Korea, Taiwan (mammography combined with clinical breast examination), but not in Hong Kong.

In summary, mammography, which was introduced in the early 1980s, is recommended in all five study populations. Japan Korea organized a breast cancer screening program in 2002 that combines mammography with clinical breast examination; so far, breast cancer mortality has increased. Taiwan implemented a stratified breast cancer screening program in 1995, the mortality rate stopped increasing in the mid 1990s. The mortality rate in Singapore decreased before the introduction of screening (mammography with clinical breast examination) in 2002. In Hong Kong where no organized screening exists, breast cancer mortality tended to decrease slightly after 1990.

Conclusions:

The present study suggests that temporal trends of breast cancer mortality in Asian female populations will change as the prevalence of risk factors change screening treatment improve.

Thus, it is difficult, too early, to assess the impact of breast cancer screening among Asian populations. Investigating current mortality trends should help us to evaluate the effectiveness of breast cancer screening programs in the future.