



# Prediction of breast cancer incidence in the Region of Crete

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## Purpose

➤ This study reports on the **burden** of malignant neoplasms of breast among Cretan women.

**Overall aim:** to predict **future trends** and identify **high risk areas** for potential interventions.

## Methods

❖ Data were obtained from the **Cancer Registry of Crete (CRC)** for the period **1992-2013**.

❖ The **Age-Adjusted Incidence Rates (AAIR)** and **Age-Specific Incidence Rates (ASIR)** were calculated, while a spatio-temporal prediction model was performed to estimate the **expected AAIRs** per municipality for the next decade (2014-2023).

❖ Getis-Ord  $G_i^*$  was applied on individual-level data (mapped based on the place of residence) to identify the **current and future hot spots**.

## Results - I

❑ Breast cancer (BC) is the most frequent malignant neoplasm among Cretan women (mean **AAIR=56.8 new cases/100,000/year**).

❑ A **significant increase** (Pvalue=0.04) was observed from 1992 (AAIR1992=48.5 new cases/100,000/year) to 2013 (AAIR2013=66.7 new cases/100,000/year).

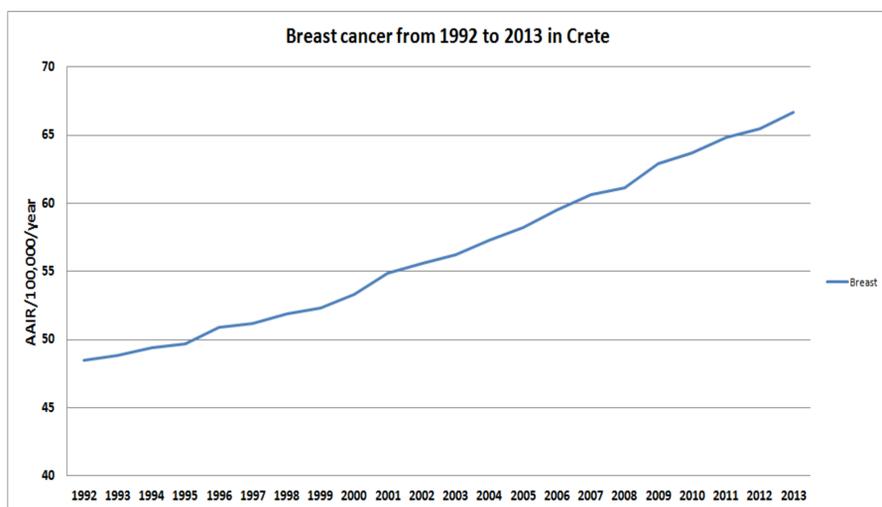


Figure 1: AAIR of breast cancer in females (1992-2013)

❑ ASIRs **increased steeply** in the **age group of 30-34** (ASIR= 85.3/100,000/year), **rises steadily** until the age group of **50-54** (ASIR= 273.8/100,000/year) and then **increases rapidly from 55 to 64** (ASIR= 344.6/100,000/year).

❑ ASIRs **decrease slightly** in the **age group of 65-69** (ASIR= 321.9/100,000/year) and **increase again** after the age of **70 years** (AAIR= 387.5/100,000/year).

## Results II

❑ These trends are expected to keep increasing within the next decade (**expected AAIR=76,2 new cases/100,000/year**).

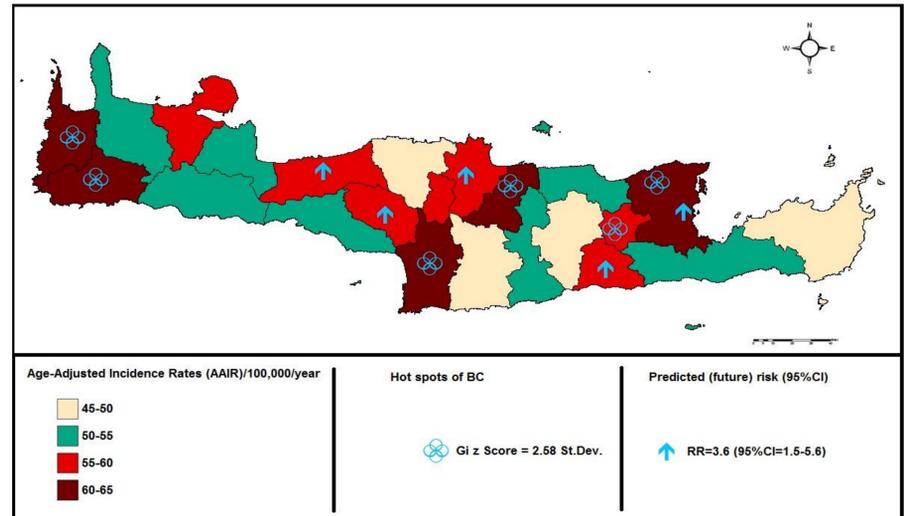


Figure 2: AAIR, BC hot spots and predicted future risk

## Discussion

➤ Greece (and Crete) present **lower rates** of BC compared to the mean European rate; but with **higher increasing trends**.

➤ Specific **explanations** remain to be uncovered; genetic differences, dietary patterns, alcohol consumption, sun exposure and other factors may contribute.

➤ The **variability** in BC incidence within the island of Crete probably reflects the **heterogeneity** of the population and environmental and social conditions.

➤ **Lack of national screening program** leads to diagnosis at a more **advanced stage**, especially among the residents of rural areas.

## Conclusions

The Region of Crete should arm its mobile **mammography units** in order to **minimize the increased BC burden** among women. Due to the low funding resources during the period of the Greek economic crisis, priority should be given to the identified **hot spots**.

## Future research

✓ A field study to identify the local **beliefs** and lifestyle **behaviors** in relation to BC.

✓ A field study to identify the **facilitators/barriers** of mammography screening in rural areas.

✓ **Training of GPs** to offer comprehensive prevention services in rural areas of high risk.

## Affiliations:

1. Cancer Registry of Crete



Figure: CRC's team. Photos are placed according to authors order.



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