Investigating a possible cancer cluster in a community with Saskatchewan cancer registry information

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ABSTRACT

Background: Recently the Saskatchewan Cancer Agency (SCA) was contacted regarding a possible cancer cluster occurring among residents in a small area of one of Saskatchewan’s major cities. The SCA’s Epidemiology Department is responsible for investigating possible cancer clusters in the province. Between 1930 and 1979, there was an operational oil refinery located in this neighborhood. In 1980, the refinery was removed from the land, and the surrounding area became commercial and residential property owned by the city.

Methods: Using Saskatchewan cancer registry (SCR) information and Centre for Disease Control and Prevention (CDC) methodology, the possible cancer cluster in this residential area of the city was investigated. The SCA’s cancer registry data was linked with the refinery census data. All cases were matched to the following age and site-specific rates for each site across the province.

Results: Between 1995 and 2006, 135 invasive cancer cases were diagnosed among residents of this area. The expected site-specific cancer cases in this area were calculated using the age and site-specific rates for the whole province. All cases were matched to the following age and site-specific rates for each site across the province.

Conclusion: The occurrence of a cluster of cancer cases is significantly higher than expected.

INTRODUCTION

The SCA was contacted to investigate a possible cancer cluster in a residential area of a city in Saskatchewan. A cancer cluster is defined as “the occurrence of a greater than expected number of cases of a particular disease within a period of a group of people, a geographic area, or a period of time.”

Methods

The objective of the study was to investigate a possible cancer cluster based on standard guidelines published by the Center for Disease Control and Prevention (CDC).

RESULTS

135 invasive cancer cases were diagnosed among residents of the area of interest between 1995 and 2006. The cancer cases included cancer cases that the SCA has released in the past. Typically, cancer clusters are clusters that the SCA’s attention by citizens observing an apparent increase in cancer in their community. This cancer cluster investigation was initiated by a suspicion of an increased exposure to harmful chemicals associated with the oil refinery.

All cases of invasive cancer were retrieved from the SCR (1995-2006). The SCA was established in 1932 and is the oldest cancer registry in Canada with comprehensive follow-up (less than 2% lost to follow-up).

Conclusions

A cancer cluster may be due to chance alone, like the clustering of balls on a pool table. The term cancer refers not to a single disease, but instead to a group of related yet different diseases. There were a small number of cases in a small area for several cancer cases resulting in wide confidence intervals.

Strengths

High accuracy of data.

Limitations

There was no information regarding other risk factors for each of the cancer cases identified in this study population, i.e., genetic, occupational, nutritional, lifestyle factors.

What We Learned from the Investigation

"Response to a requestor as soon as possible."

"Keep in contact with the requestor and assure him/her that you are investigating the cluster, however it will take time."

"Appropriately communicate with a requestor who may not be willing to accept the investigation conclusion."

"Involve partners within healthcare and government sectors to help communicate the results."

References