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Increasing trends in cervical cancer mortality among young Japanese women below the age of 50 years: An analysis using the kanagawa population-based cancer registry, 1975–2012

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ABSTRACT

Background: In Japan, cervical cancer (CC) deaths among women aged <50 years have doubled over the last three decades. Obtaining age-specific CC mortality rates among young women is important for taking measures against CC. Age-adjusted CC mortality rates for all ages are inadequate because of the classification of 'uterine cancer, not otherwise specified' (NOS uterine cancer) and CC mortality rates among elderly women. The aim of the present study was to calculate exact age-specific CC mortality rates in women aged <50 years in Kanagawa, taking into account the impact of NOS uterine cancer.

Methods: Using the Kanagawa Cancer Registry, CC deaths (1975–2012) were analyzed and CC mortality rates (age-adjusted, 20–29, 30–49, and ≥50 years) were calculated. In addition, hospitals were surveyed to reclassify cases of NOS uterine cancer. After reclassification, chronological trends were also analyzed.

Results: Age-specific CC mortality rates in Kanagawa and Japan overall showed increasing trends for ages 20–29 (P for trend < 0.001) and 30–49 (P for trend < 0.001). Rates of NOS uterine cancer death were significantly lower in Kanagawa than in Japan overall (P < 0.05), except for patients aged <50 years in 2005–2009 (P = 0.159).

Conclusions: The present study revealed concern for CC among Japanese women younger than 50 years. Well-organized CC screening and HPV vaccination should be provided to reduce CC mortality rates for these young women.

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1. Introduction

Cervical cancer (CC) was the third most common cancer in women worldwide in 2012 [1]. Since the 1970s, CC screening has reduced CC mortality rates in many developed countries [2–5].

Currently, CC prevention in Japan faces two obstacles: low CC screening uptake and the suspension of the human papillomavirus (HPV) vaccination program. Cytological CC screening began in Japan in 1961. Local governments provide cytological screening

and support 70–90% of its cost. Cytological screening in Japan reduced the age-adjusted CC mortality rates from 3.9/100,000 (1975) to 2.9/100,000 (1994), followed by a leveling off after 1995 [6,7]. The decline in age-adjusted CC mortality rates in Japan stopped, mainly because of low screening uptake. Although the Japanese government encourages women aged 20–69 years to be screened biennially, self-reported data showed that only 42.1% had been screened within the past 2 years in 2013 [8]. In June 2013, the Japanese government temporarily suspended the active promotion of the HPV vaccination program because of adverse reactions, and this has not yet resumed [9]. Morimoto et al. reported that this suspension reduced the coverage of the first dose of the HPV vaccination by 97% in June 2013, compared with the same month in

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2012 in Sakai City, Osaka (no nationwide HPV vaccine coverage rate is officially published) [10].

These situations in Japan might result in increasing CC mortality rate among young women. According to data from the Ministry of Health, Labor and Welfare, in Japan 10,737 invasive CC cases were diagnosed in 2010, and 2656 CC cases died in 2013 [6,11]. To develop and promote a well-organized CC screening system in Japan, we must clarify the risk of CC, especially among young women, by resolving certain issues in Japanese CC statistics.

Age-adjusted CC mortality rates for all ages are affected by two factors: unclassified uterine cancer cases, which are coded as “uterine cancer, not otherwise specified” (NOS uterine cancer), and CC mortality rates among elderly women. First, the classification issue caused by NOS uterine cancer presents an obstacle in CC statistics in Japan, as noted elsewhere [12]. The International Classification of Diseases 8 (ICD-8) affected CC mortality, because ICD-8 did not require a clear distinction between CC and other uterine cancers. The rate of NOS uterine cancer among all uterine cancers decreased from 71% (1975) to 21% (2013), especially after ICD-10 came into use in Japan in 1995 [6]. However, 1270 cases

were still classified as NOS uterine cancer in 2013. Some European countries resolved this issue by reclassifying NOS uterine cancer cases in proportion to age- and time-specific CC mortality rates [12]; however, no studies have been carried out on the validity of reclassifying NOS uterine cancer in Japan. Until the law creating a nationwide cancer registry comes into force in January 2016, we can only cite estimated Japanese cancer incidences from limited prefectural data [13]. Cancer mortalities in Japan, in contrast, are complete, because of the 100% collection by legal mandate through the family register system. There is a possibility of resolving the NOS uterine cancer issue by reclassifying these cases on the basis of original medical records. The second factor affecting age-adjusted CC mortality rates are CC mortality rates among elderly women. Age-adjusted CC mortality rates for all ages are affected by the elderly population, because age-specific CC mortality rates have peaked among those aged ≥ 50 years each year since the mortality data were first collected in 1958 [6]. Therefore, to clarify the CC mortality issues among young Japanese women, it is necessary to analyze CC mortality rates separately by age group.

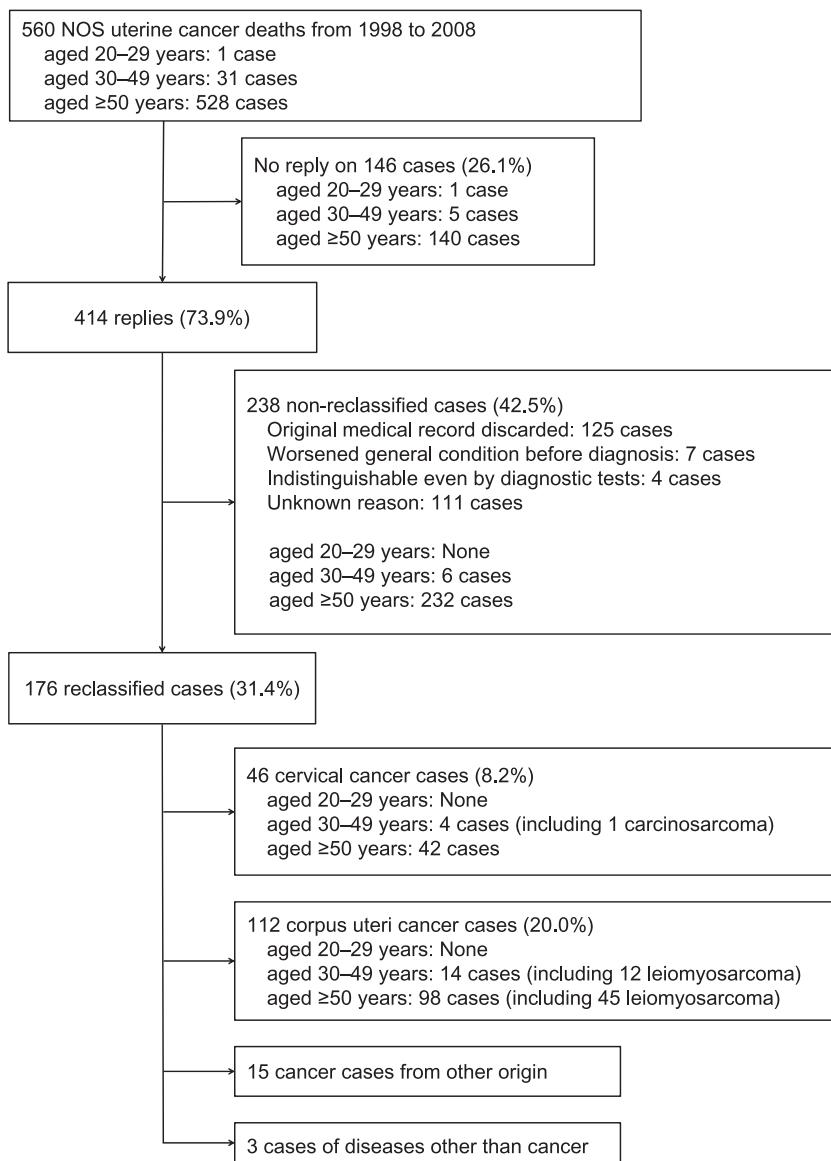


Fig. 1. Mail survey reclassification results for uterine cancer “not otherwise specified” (NOS uterine cancer) deaths between 1998 and 2008 in the Kanagawa Cancer Registry. Data from Kanagawa do not contain newly reclassified cervical cancer cases through our mail survey.

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