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제목	국문	인천광역시의 암발생율, 1997-1998			
	영문	Cancer incidence in Incheon, Korea, 1997-1998			
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목적

The city of Incheon is located on the western side of the Korean peninsula, with a sea to the west and metropolitan Seoul to the east. It is a heavily industrialized city with a well-established medical delivery infrastructure. The population of the city according to the survey conducted by the Statistical Office was 2.5 million in 1997-1998. This estimate was based on the periodic population census conducted every 5 years.

It has been five years since Incheon Cancer Registry (ICR) began to register cancer cases. However, this analysis was restricted to 1997-1998 because of the change of registry coverage and DCN confirmation policy. We included the cancer patients reported from the medical facilities outside the Incheon city to minimize the number of omitted patients since 1997. After getting death records from Statistical Office, we confirmed cancers by contacting the hospitals where the death certificates were issued.

The subjects of the registration were those who were residents of Incheon city, who developed new form of cancer or died of cancer, and whose cancer was confirmed to be malignant through clinical tests or pathological tests except those with carcinoma in-situ during the survey period.

In this report, we present the result from this population-based registry for the period of 2 years: January 1997 to December 1998, during which 8,180 new cases were recorded in Incheon City. These data are of interest not only for figuring out the profile of cancer incidence in this part of South Korea, but also because they permit comparison with incidence rates in the East Asian Countries and with the cancer patterns observed among Korean migrants to Los Angeles, USA.

2. 방법

The population-based Incheon Cancer Registry receives information from the Central Cancer Registry (CCR). Because every hospital with residency training program is required to report newly diagnosed cancer cases to the CCR, the main source of ICR was the CCR data. In addition, we collect information from the following sources: outpatient data from hospitals required to report to CCR, admission and outpatient data from hospitals not required to report to CCR, cancer claim information from medical insurance, pathology reports of cancer patients from

pathology laboratories, radiology reports of cancer patients from radiology clinic and death certificates of cancer patients who died in the Incheon City.
Death certification notifications were followed up to obtain additional information related to the diagnosis of the cancer. When we could not get reliable data, the cases were registered as the death certificate only (DCO).
Date of incidene of a case is defined as date of hospital visit or date of diagnosis for the cancer. Information collected on each case includes name, age, gender, marital status, residence, incident date, hospital, tumor site, histology, basis of diagnosis, stage of disease and vital status.
The registration process was carried out with a microcomputer using our software developed for cancer registration. This allows detection of duplicate records based on name, resident identification number, and gender. Data validation was also checked with this software. Tumor site and histology were coded according to the 10th revision of the International Classification of Diseases (ICD10).
The population at risk for the period 1997-1998 was estimated by linear interpolation from the population estimates based on the census of 1995. The age- and sex-specific population estimates at risk is shown in Figure 1. For the analysis, all registered incident cancer cases during the period 1997-1998 were tabulated by age and sex. Rates per 100,000 person-years were calculated for 5-year age groups and age-adjusted to the world standard population using the direct method (Parkin 1997).

3. 결과

The total number of cancers registered among the population of Incheon City over the 1997-1998 period was 9,923, comprising 5,419 (54.6%) men and 4,504 (45.4%) women.
Table 1 and 2 show the distribution of cases registered by 10-year age group and site (ICD-10) for males and females as well as the percentage frequencies and crude and age-standardized rates. The estimated rates of incidence for all cancers were 217.9 per 100,000 (crude) and 324.9 per 100,000 (ASR) for men and 184.3 per 100,000 (crude) and 196.9 per 100,000 (ASR) for women.
Table 3 shows the percentage of cases registered with microscopic verification of diagnosis (MV), death certification only (DCO), and mortality/incidence ratio (MI ratio) by site and sex. 78.5% of all registrations were MV and 17.4% were DCO. MI ratio was 53.6%. The cancers with the highest percentage of histological verification were those located in readily accessible sites such as breast (95.3%) and cervix (95.1%). Liver (26.5%) and pancreas (41.5%) were the sites that had the lowest percentage of histological verification.
Figure 2 shows the age-specific incidence of all sites of cancer in males and females. There are progressive increases in the incidence of both sexes, with a small decline in the oldest age group (75+). Figure 3 and 4 show the age-specific incidence of the cancers in each sex. The 3 principal cancer sites in men were stomach (25.4% of cancers; ASR 81.8), lung (16.4%; ASR 60.0), and liver (16.1%; ASR 48.4). In women, cancer of stomach was the most common malignancy (15.5%; ASR 30.4), followed by cervix (13.7%; ASR 25.4), and breast (12.9%; ASR 24.2).
Table 4 shows the comparison of age-standardized incidence rates of the principal cancers in Los Angeles Korean, Osaka (Japan), Shanghai (China), and Hongkong (China).

4. 고찰

Cancer incidence data in a third largest city of South Korea are reported. Cancer registration began very recently in Incheon, Korea. Even though we could not show the secular incidence trends for cancers because of the short period covered in this report, results from ICR provides valuable information on the incidence and pattern of cancer occurrence in Incheon. Among men, cancers of stomach, liver and lung accounted for 57.9% of all cancer cases. Stomach cancer incidence rate was also highest among women, followed by cervix and breast cancer, which accounted for 42.1% of all cancer cases.

Although ICR has a brief history, we believe that the incidence rates presented here are a reliable data for cancer occurrence in Incheon City. This is largely due to Central Cancer Registry that began since 1980 and a medical insurance that covered almost all residents, which provided reliable information for the enumeration of new cases of cancer. Reports of cancer patients from pathology laboratories or from radiology clinics and death certificates of cancer patients who died in the Incheon City were also included as the valuable sources of cancer occurrence. The data collection is regularly supervised and the information is carefully scrutinized. One of major factors undermining reliability is that the level of DCO cases (17.4%) was rather high, largely due to difficulty to get death certificates, death outside medical institution, and low response rate of the institution to follow-up.