

The Epidemiology of Ovarian Cancer in Khon Kaen 1985-1989

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Abstract : The data were collected from the Khon Kaen population-based cancer registration which is one of two population-based cancer registrations of Thailand. It covers the population of about 1.5 million in 20 districts. The female population from 1985 to 1989 was about 750000 to 800000.

There were 136 new cases of ovarian cancer recorded in this 5-year period. The aged-standardized rate from 1985 to 1989 was 4.49, 4.26, 4.42, 7.09 and 2.72 per 100000 population per year respectively. The age-standardized mortality rate was 1.95, 0.82, 0.95, 0.88 and 0.34 per 100000 population per year respectively. (Thai J Obstet Gynaecol 1990 ; 2: 95-101.)

Key words : ovarian cancer, epidemiology, cancer registry

In developed western countries, ovarian cancer is the sixth most common cancer in women, accounting for about 4% of all female cancers. It is the leading cause of death from cancer in women in the United States and results in about 5% of all deaths from cancers⁽¹⁾. Up to now there has been no report concerning population-based statistics of ovarian cancer in Thailand. The National Cancer Institute of Thailand reported the cancer statistics

collecting the data from several hospitals voluntarily with a few incentives in 1982 but the data seems to be underregistered⁽²⁾. This report is the first population-based data of ovarian cancer in Thailand.

Materials and Methods

All cancer cases diagnosed during the period from January 1985 to December 1989 in all hospitals in

Khon Kaen province were collected according to the technic described by MacLennan⁽³⁾. There were 22 governmental hospitals and 5 private hospitals. All the cancer deaths registered in the death certificates were reviewed and collected during the same period. The analysis of data for the incidence and mortality rates for 100000 population both crude rate and age-standardized to world population (Table 1) were done by direct method^(4,5). Case fatality rate was obtained from the number of deaths from ovarian cancer in each year divided by the number of new cases in the same year and expressed in per cent.

The female population data of Khon Kaen province was obtained from the office of the National Eco-

nomic and Social Development Boards for the year 1986 to 1989⁽⁶⁾. Since the 1985 estimation was not available, the 1986 data was used for calculation (Table 2).

Results

Incidence rates

Between January 1, 1985 and December 31, 1989, there were 136 cases of ovarian cancer collected (Table 3). The crude incidence rates varied from 2.72 to 4.89 cases per 100000 population per year and the age-specific incidence rates varied from 3.88 to 7.01 cases per 100000 population per year.

The age distribution of ovarian cancer in Khon Kaen province was presented as biphasic distributions (Figure 1). The young age group with the peak of 20 to 24 years and the old age group with the peak of 45 to 49 years. Most patients were married and only 12.5% of them were single (Figure 2). Figure 3 shows the first hospitals record of those ovarian cancer cases, most of them were from big hospitals in town. Three-fourth of the cases were in the late stages by the time of registration (Figure 4), only 8.8% of the cases were in stage I. The sites of metastasis are shown in Figure 5, the most common sites were liver, lymphnodes, lung and pleura, and brain. Figure 6 shows the mode of diagnosis of those cancer cases 73.5% of which had histological diagnosis. Figure 7 shows the treatment modali-

Table 1 Standard world population

Age	World population
0-4	12000
5-9	10000
10-14	9000
15-19	9000
20-24	8000
25-29	8000
30-34	6000
35-39	6000
40-44	6000
45-49	6000
50-54	5000
55-59	4000
60-64	4000
65-69	3000
70-74	2000
75+	2000
Total	100000

Table 2 Khon Kaen female population in the years 1985-1989

Age groups	1985	1986	1987	1988	1989
0-4	97100	97100	96400	95700	94700
5-9	101900	101900	100200	98600	97200
10-14	103900	103900	103700	103400	102700
15-19	94600	94600	96800	98500	99700
20-24	73000	73000	77600	81900	85600
25-29	58200	58200	59900	61000	63100
30-34	50000	50000	51600	53200	54700
35-39	42100	42100	43400	44700	46100
40-44	34800	34800	36100	37400	38600
45-49	29800	29800	30300	31000	31800
50-54	25400	25400	26000	26700	27400
55-59	19900	19900	20900	21700	22500
60-64	14900	14900	15500	16200	16900
65-69	10600	10600	11000	11500	12000
70-74	7300	7300	7400	7600	8000
75+	7300	7300	7500	7800	8100
Total	770800	770800	783800	796900	809110

The population data in the year 1985 is not available, the figure of population of the year 1986 is used instead.

Table 3 Number of new cases of ovarian cancer in Khon Kaen province, Thailand, from 1985-1989

Years	No. of patients	CR	ASR
1985	23	2.98	4.49
1986	26	3.37	4.26
1987	23	2.93	4.42
1988	42	4.89	7.07
1989	22	2.72	3.88

CR = Crude rate

ASR = Age standardized rate

ties of ovarian cancer in Khon Kaen province, 75% of the cases had been operated on and about 40% of those had been treated by chemotherapy.

Mortality rate

Deaths from ovarian cancer for the population in Khon Kaen province from 1975 to 1989 are shown in Table 4 with crude and age-standard-

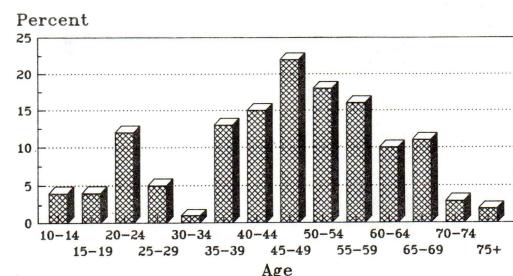


Fig. 1 Age distributions of ovarian cancer in Khon Kaen province 1985-1989.

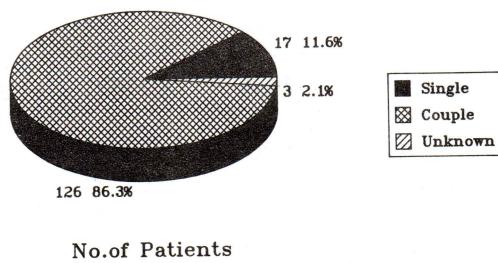


Fig. 2 Marital status of ovarian cancer in Khon Kaen province 1985-1989.

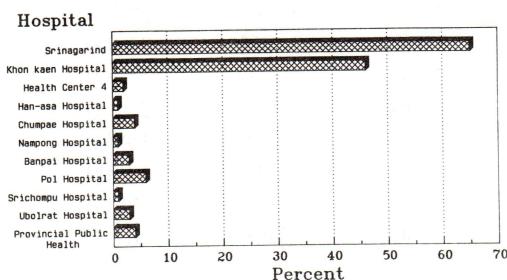


Fig. 3 First hospital registration of ovarian cancer in Khon Kaen province, 1985-1989.

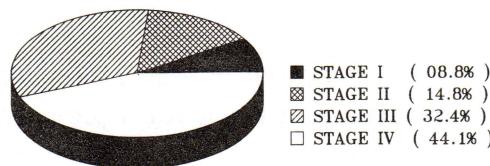


Fig. 4 Staging of ovarian cancer in Khon Kaen province 1985-1989.

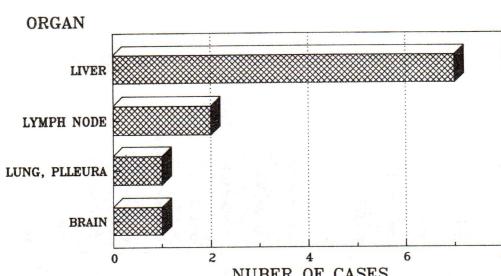


Fig. 5 Sites of metastasis of ovarian cancer patients in Khon Kaen province, 1985-1989.

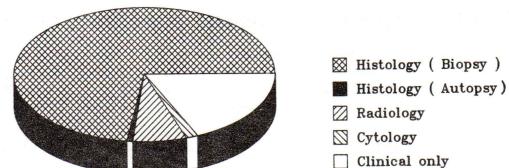


Fig. 6 Mode of diagnosis of ovarian cancer in Khon Kaen province 1985-1989.

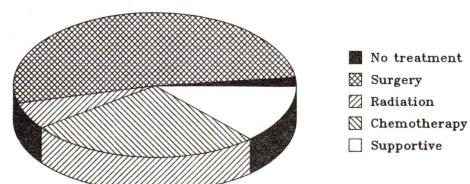


Fig. 7 Treatment of ovarian cancer in Khon Kaen province 1985-1989.

Table 4 Deaths from ovarian cancer 1985-1989

Years	No. of patients	CMR	ASMR
1985	5	0.64	1.95
1986	6	0.78	0.82
1987	4	0.51	0.95
1988	9	1.13	8.8
1989	2	0.25	3.4

CMR = Crude mortality rate

ASMR = Age-standardized mortality rate

ized mortality rate. The age-standardized mortality rate ranged from 0.82 to 8.8 cases per 100000 population per year. Case fatality rates of ovarian cancer in Khon Kaen province varied from 8.76% to 43.42% and the rates were decreased (Table 5).

Table 5 Incidence and mortality rates of ovarian cancer in Khon Kaen, Thailand, 1985-1989

Years	New cases	Incidence/100000		Mortality/100000		
		Crude incidence	Age-standardized	Crude MR	Age-standardized	Case fatality rate (%)
1985	23	2.89	4.49	10	1.95	43.42
1986	26	3.37	4.26	5	0.82	19.25
1987	23	2.93	4.42	5	0.95	21.49
1988	39	4.89	7.07	5	0.88	12.44
1989	22	2.72	3.88	2	0.34	8.76

Table 6 Cancer of ovary, cervix and all cancers at Srinagarind Hospital, 1985-1989.

Years	Ovary	Cervix	Total	Cancers
1985	64	329	2034	
1986	64	416	2533	
1987	96	451	3653	
1988	94	483	3655	
1989	91	605	4101	
Total	409	2284	15976	

Discussion

From the same registry, ovarian cancer is the second most common cancer for gynaecological cancers in Khon Kaen province next to cervical cancer of which the age-standardized incidence rate was 17.2 per 100000 population per year^(7,8). By the hospital-based registration, ovarian cancer ranged from 64 to 96 cases per year and comprised only one-sixth of cervi-

cal cancer (Table 6). Even though, ovarian cancer is low for the Thai population as a whole compared with some developed countries (Table 7), for a referral center like Srinagarind Hospital it is a problem. As Thailand is developing from an agricultural country to be an industrialized one, the risk of ovarian cancer is increasing. The high rate for ovarian cancer were from those who had an ovarian cancer-prone family, more than 40 ovulation years and mother or sisters with ovarian cancer. Those who were above 45 years old with nulliparity, or first pregnancy after age 30, late menopause and regular perineal exposure to talc are also significant risk of ovarian cancer. Other possible risk factors include a history of ionizing irradiation to the pelvis. It has also been linked with carcinoma of the breast, endometrium, and colon suggesting a common aetiology. There is no clear means of prevention of ovarian cancer and the treatment results reported are

Table 7 Incidence of ovarian cancer in some selected countries in the world⁽⁵⁾

Country	Registry	ASR*
Europe		
Norway	The Cancer Registry of Norway	15.3
Sweden	The Swedish Cancer Registry	15.2
Denmark	The Danish Cancer Registry	14.5
Iceland	The Icelandic Cancer Registry	13.9
Germany	Hamburg	12.8
U.K.	Oxford	12.6
Spain	Navarra	6.4
America		
California	Alameda, white	12.1
	Alameda, black	10.5
Connecticut	Connecticut, white	12.0
	Connecticut, black	7.3
Canada	National	11.5
	Alberta	11.1
	British Columbia	10.6
Asia		
China	Shanghai	5.0
Hong Kong	Hong Kong	5.8
India	Bangalore	5.9

Approved by International Agency for Research on Cancer, WHO

*ASR = Age-standardized incidence rate.

still poor. Comparing the case fatality rate of ovarian cancer to that of cervical cancer at the same registry it is twice as high. The problem of ovarian cancer to referral centers is increasing, both the treatment and the result. Surgery is considered to be the first choice, followed by adjuvant chemotherapy. The cost of chemotherapy is increasing and without satisfactory results⁽⁹⁾. In the next few years ovarian cancer will be the main problem for gynaecologists in Thailand.

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