

Chapter 23

Breast cancer survival in Riyadh, Saudi Arabia, 1994–1996

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Abstract

The national cancer registry in Saudi Arabia has functioned since 1994, collecting population-based incidence data on malignant and in situ tumours. Cancer registration is carried out by both passive and active methods. The registry contributed data on survival from cancer of the breast registered in 1994–1996 from Riyadh province. Follow-up was carried out predominantly by active methods, and the median follow-up was 57 months. The proportion of cases with a histological confirmation of breast cancer diagnosis was almost 100%; there were no cases registered based on death certificate only (DCO); 93% of total cases registered were included in the survival analysis. Complete follow-up at five years was 80%. Relative survival rates at one, three and five years were 96%, 83% and 65%, respectively. Five-year age-standardized relative survival was 65%. Five-year relative survival by age group did not show any pattern and was fluctuating. Five-year absolute survival by extent of disease was localized (70%), regional (56%), distant metastasis (57%) and unknown (62%).

National cancer registry

The national cancer registry in Saudi Arabia has functioned since 1994, collecting population-based incidence data on malignant and in situ tumours. It is based at Gulf Centre for Cancer registration, King Faisal Specialist Hospital, Riyadh. Cancer registration is carried out by both passive and active methods. Cancer care services are provided predominantly by the Ministry of Health, which includes cancer centres with all diagnostic and treatment facilities and other hospitals with some participation from private sector. Data are collected from all these sources by scrutiny of records or linkage with data in computer systems maintained at these places. The registry covers an area of 3 855 000 km² and caters to a mixed urban and rural estimated population of about 20.7 million in 1998 with a sex ratio of 1264 males to 1000 females; the corresponding Saudi population is 15.1 million with 1020 males to 1000 females. The average annual age-standardized incidence rate among Saudis was 65 per 100 000 among males and 68 per 100 000 among females, with a lifetime cumulative risk of one in 13 of developing cancer for both sexes in the period 1997–1998. The top-ranking cancers among males are liver, followed by non-Hodgkin lymphoma and leukaemia. Among females, the order is breast, thyroid and leukaemia [1].

The registry contributed data on survival from cancer of the breast registered in 1994–1996 from Riyadh

province in this volume of the IARC publication on *Cancer Survival in Africa, Asia, the Caribbean and Central America*.

Data quality indices (Table 1)

The proportion of cases with histological confirmation of breast cancer diagnosis in this series was almost 100%, and there were no cases registered based on death certificate only (DCO). Cases without any follow-up information made up 6% and other inconsistencies in data constituted 1%. Thus, 298 (93%) of 321 cases registered were included in the estimation of survival probability.

Outcome of follow-up (Table 2)

Follow-up was carried out predominantly by active methods, since no centralized mortality registration system existed. The methods included postal and telephone enquiries, repeated scrutiny of records or data linkage with computer systems at source hospitals [2].

The closing date of follow-up was 31st December 2001. The median follow-up was 57 months. Complete follow-up at five years from the incidence date was 80%. The majority of losses to follow-up occurred in the first year of follow-up and decreased through successive intervals of follow-up time. The losses to follow-up have been ascertained to be random.

Survival statistics

All ages and both sexes together (Table 3)

The relative survival probabilities at one, three and five years from the incidence date were 96%, 83% and 65%, respectively. The 5-year age-standardized relative survival for all ages together was 65%, while the corresponding figure for 0–74 years of age was 65%.

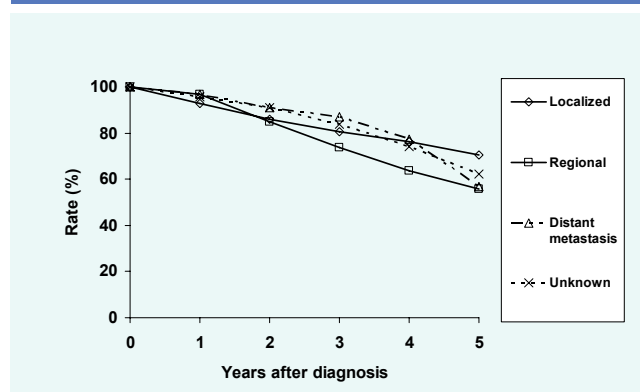
Age group (Table 4b)

The 5-year relative survival by age group does not display any pattern and was observed to be fluctuating.

Extent of disease (Table 5)

There was not much of a difference in proportion of cases diagnosed with localized (31%) or regional spread of disease (33%). Distant metastasis accounted for 21%, while the extent of disease was unknown in 15%. The 5-year absolute survival by extent of disease was localized (70%), regional (56%), distant metastasis (57%) and unknown (62%).

Figure 1. 5-year Absolute survival (%) from breast cancer by extent of disease, Riyadh, Saudi Arabia



References

1. National Cancer Registry. *Cancer incidence report, Saudi Arabia: 1997–1998*. Ministry of Health, Kingdom of Saudi Arabia, 2001.
2. Ravichandran K, Hamdan AH, Dyab AR. Population-based survival of female breast cancer cases in Riyadh region, Saudi Arabia. *Asian Pacific J Cancer Prev*. 2005; 6: 72–76.

Table 1. Data quality indices - Proportion of histologically verified and death certificate only cases, number and proportion of included and excluded cases by site: Riyadh, Saudi Arabia, 1994–1996 cases followed-up until 2001

Site	ICD-10	Total registered	%		Excluded cases					Included cases	
			HV	DCO	DCO	Follow-up	Others	Total	%	No.	%
Breast	C50	321	99.7	0.0	0	18	5	23	7.2	298	92.8

HV: histologically verified; DCO: death certificate only

Table 2. Number and proportion of cases with complete/incomplete follow-up (in years) and median follow-up (in months) by site: Riyadh, Saudi Arabia, 1994–1996 cases followed-up until 2001

Site	ICD-10	Cases included	Complete FU		Incomplete FU: lost to FU						% with complete FU at 5 years	Median FU (in months)
			Alive/dead at end of FU		% lost to FU: years from diagnosis							
			No.	%	No.	%	< 1	1-3	3-5	> 5		
Breast	C50	298	233	78.2	65	21.8	12.7	4.4	3.0	1.7	79.9	57.4

FU: follow-up

Table 3. Comparison of 1-, 3- and 5-year absolute and relative survival and 5-year age-standardized relative survival by site: Riyadh, Saudi Arabia, 1994–1996 cases followed-up until 2001

Site	ICD-10	Cases included	% Absolute survival			% Relative survival			% ASRS at 5-years	
			1-year	3-year	5-year	1-year	3-year	5-year	all ages	0-74 years
Breast	C50	298	95.3	80.2	61.3	96.3	82.7	64.5	65.3	64.5

ASRS: age-standardized relative survival

Table 4a. Site-wise number of cases, 5-year absolute and relative survival by sex: Riyadh, Saudi Arabia, 1994–1996 cases followed-up until 2001

Site	ICD-10	Cases included	Male			Female		
			% 5-year survival			% 5-year survival		
			No.	Abs	Rel	No.	Abs	Rel
Breast	C50	298				298	61.3	64.5

Abs: absolute survival; Rel: relative survival

Table 4b. Site-wise number of cases and relative survival by age group: Riyadh, Saudi Arabia, 1994–1996 cases followed-up until 2001

Site	ICD-10	Cases included	Number of cases by age group					Relative survival by age group				
			% 5-year survival					% 5-year survival				
			< 45	45-54	55-64	65-74	> 75	< 45	45-54	55-64	65-74	> 75
Breast	C50	298	145	62	56	20	15	62.8	68.7	64.4	61.5	71.1

Table 5. Proportion of cases and 5-year absolute survival by extent of disease and site: Riyadh, Saudi Arabia, 1994–1996

Site	ICD-10	Cases included	% of cases by extent of disease				% 5-year absolute survival			
			Localized	Regional	Dist. met.	Unknown	Localized	Regional	Dist. met.	Unknown
Breast	C50	298	30.9	32.6	20.8	15.7	70.4	55.7	56.7	62.3

Dis. met.: distant metastasis

