ORIGINAL ARTICLE

Antigua/Barbuda Cancer Incidence Study

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ABSTRACT

Objective: *The Antigua/Barbuda Cancer Study was undertaken to determine the incidence of cancer and describe the cancer distribution by age and gender.*

Method: *A five-year retrospective study of cancer occurrence in Antigua/Barbuda was conducted. The surgical pathology records of the Holberton Hospital and Medpath Clinical Laboratory for the period 2001−2005 were reviewed for all histologically confirmed cases of cancer.*

Results: *There were 492 documented new cancer cases – 238 males (age standardized rate [ASR] 148.0) and 254 females (ASR 125.7). The main incident cancers in men were prostate (ASR 69.4), skin (ASR 34.3) and bowel (ASR 11.7) and in women breast (ASR 37.6), cervix uteri (ASR 23.0) and skin (ASR 17.8).*

Conclusion: *Gender-specific cancers were the dominant cancers among both genders, accounting for 61% of cases of cancers in women. The median age of cancer is lower among women. Further studies would be greatly facilitated by the implementation of a cancer registry in Antigua/Barbuda.*

Keywords: Antigua and Barbuda, cancer incidence, gender-specific cancers

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INTRODUCTION

The aim of the study was to describe the distribution of cancers in Antigua and Barbuda by age and gender. Specific objectives were: to determine the five-year incidence of cancers and their classification and to examine associations with age and gender. No cancer registry exists in Antigua and Barbuda; hence there are no readily available data on the occurrence of the various types of cancer and their accompanying demographics. This study serves as a follow-up to the last published study from Antigua/Barbuda (1) and seeks to determine changes in cancer morbidity since that period. A five-year retrospective study of cancer occurrence in Antigua/Barbuda was conducted.

SUBJECTS AND METHOD

The protocol of the study required that the Surgical Pathology records of the Holberton Hospital (the sole public hospital in Antigua/Barbuda), and Medpath Clinical Laboratory be reviewed for all histologically confirmed cases of cancer occurring in residents of the island over the period January 1, 2001 to December 31, 2005. The cases included in this study approximate the population-based data as no other facilities for diagnosis of cancer exist on the island. Information on histological subtypes, age and gender was collected for all subjects. Cases of recurrent cancers were excluded from the study. Data were cross-referenced to prevent duplication, and only cases that had a definitive diagnosis were included. International Classification of Diseases-10th revision (ICD-10) codes (2) were ascribed to the identified cancers. For the purposes of this analysis, certain cancers were grouped, *eg* upper respiratory and alimentary includes ICD-10 codes 2 to 14; bowel includes ICD-10 codes 17 to 19. Crude and age-standardized rates (ASR) were calculated using the Antigua/Barbuda population at 2003 (3), which is the mid-year between 2001 and 2005. The World Health Organization (WHO) World Standard population (4) was used as the standard reference for age-standardization of rates. For purposes of standardization, cases with missing ages were assigned the median age of their cancer subgroup (5).

RESULTS

A total of 492 cases of cancer were diagnosed between 2001 and 2005. Table 1 shows the numbers diagnosed each year. The population at 2003 in Antigua and Barbuda stood at

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79 781. The 492 new cancer cases represent an ASR of 134.9 cases per 100 000 population per annum.

Gender-specific cancers were the predominant forms of cancer. Carcinoma of the prostate was the most common cancer reported, accounting for 22.0% of all cancer cases during this period (Fig. 1). The second leading type, skin

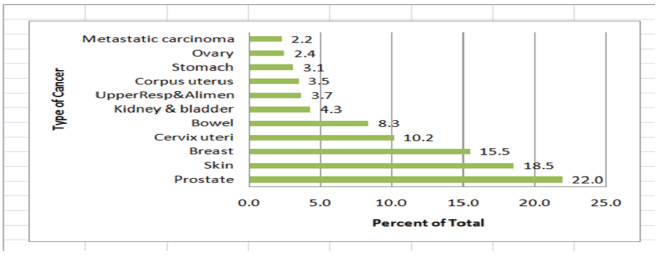

Fig. 1: Incident cancers as a percentage of total cases, Antigua/Barbuda (2001–2005); thirty-two cases (6.5%) had no recorded age.

cancer, accounted for 18.5% of all cancer incidences, followed by cancers of the breast (15.5%) and cervix (10.2%). There were 51.6% of all cancers diagnosed among females and 48.4% among men.

A comparison with the 1984–1989 study (1) shows a doubling of the crude cancer incidence (Tables 2 and 3) in

Table 1: Cases of cancer diagnosed in Antigua/Barbuda for the period 2001–2005

Year	Number of cases
2001	97
2002	83
2003	108
2004	107
2005	97
Total	**492**

men (116.5 per 100 000 population *vs* 52 per 100 000 population) and women (123 *vs* 54). This is also true for the incidence of the main cancers: prostate (52 *vs* 12), breast (37 *vs* 12), skin (25 *vs* 14) in men and (18 *vs* 8) in women. Similar doubling of incidences in women was also observed for cancers of the cervix uteri (24 *vs* 12), ovary (6 *vs* 1), corpus uterus (8 *vs* 4), bowel (10 *vs* 3) and kidney/bladder (6 *vs* 3), while the same was observed for men with respect to the bowel (11 *vs* 0.5). Lung cancer continues to show a very low incidence (ASR 1.67 men, 0.54 women), which is below the low rates of the English-speaking Caribbean (6).

Nearly all cancers occurred after age 35 years, with the highest proportions occurring in the over 65-year age group (Fig. 2). Median age was 68 years in males and 59 years among females.

Table 2: Cancer incidence in men, Antigua/Barbuda, 2001–2005

Site	Cases		Incidence per 100 000 per year	
	N	%	Crude	Age standardized rate (ASR)
Prostate	108	45.38	51.91	69.42
Skin	54	22.69	25.43	34.30
Bowel	20	8.40	10.59	11.72
Upper respiratory and alimentary	12	5.04	6.36	7.12
Stomach	10	4.20	4.77	5.36
Kidney and bladder	8	3.36	4.24	4.45
Metastatic carcinoma	6	2.52	3.18	3.67
Other sites	5	2.10	2.12	3.75
Penis	4	1.68	2.12	2.04
Lung	3	1.26	1.59	1.67
Soft tissue	2	0.84	1.06	0.85
Pancreas	2	0.84	1.06	1.26
Oesophagus	2	0.84	1.06	1.23
Testes	1	0.42	0.53	0.61
Liver	1	0.42	0.53	0.58
Total (all sites)	**238**	**100.00**	**116.53**	**148.03**

Table 3: Cancer incidence in women, Antigua/Barbuda 2001–2005

Site	Cases		Incidence per 100 000 per year	
	N	%	Crude	Age standardized rate (ASR)
Breast	76	29.92	36.80	37.60
Cervix	50	19.69	24.21	23.05
Skin	37	14.57	17.91	17.78
Bowel	21	8.27	10.17	10.79
Uterus	17	6.69	8.23	9.25
Kidney and bladder	13	5.12	6.29	6.92
Ovary	12	4.72	5.81	6.09
Upper respiratory and alimentary	6	2.36	2.91	2.75
Metastatic carcinoma	5	1.97	2.42	2.43
Stomach	5	1.97	2.42	2.71
Oesophagus	4	1.57	1.94	2.23
Other Sites	2	0.79	0.97	1.07
Bone	2	0.79	0.97	1.04
Liver	2	0.79	0.97	1.05
Thyroid	1	0.39	0.48	0.35
Lung	1	0.39	0.48	0.54
Total (all sites)	**254**	**100.00**	**122.98**	**125.66**

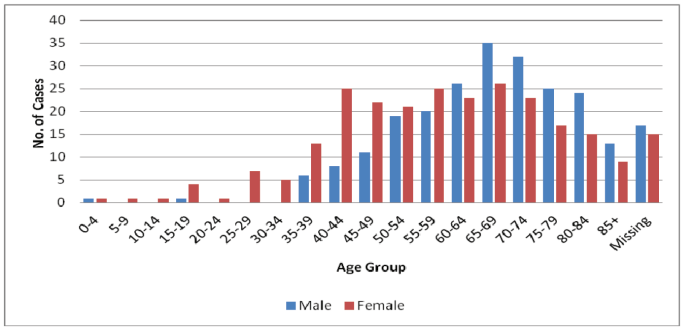

Fig. 2: Frequency distribution of all cancers diagnosed in Antigua/Barbuda between 2001 and 2005, by age group in both genders.

DISCUSSION

The numbers of cancers diagnosed each year (Table 1) fluctuate with no apparent trend so that there is no suggestion of a pattern of increasing or decreasing overall incidence.

Cancers of the prostate, skin, breast, cervix uteri and the alimentary tract remain the predominant forms of cancer diagnosed in Antigua and Barbuda for the period 2001–2005, similar to the distribution previously documented (1). However, the higher incidence in this study when compared to the 1984–1989 study may reflect increased utilization of health services and hence data capture, rather than a significant change in underlying factors.

The incidence rates in this study (ASR 148.0 in men and 125.7 in women) are, however, significantly lower than the year 2000 world incidence [ASR 201.9 in men, ASR 157.8 in women] (7), the Caribbean [ASR 196.3 in men, ASR 153.5 in women] (8), and a country of similar ethnic composition – Barbados [ASR 251.4 in men, ASR 189.1 in women] (9). These lower rates may reflect some lingering inadequacies in data capture. The lower incidence in men compared to women in this study is a reversal of that seen in the international data above and probably reflects a greater utilization of health service and more regular doctor visits by women. A number of cases are confirmed abroad but the extent of this is currently unknown. It is likely that some of these patients return home at some stage for treatment, as is reported for Bermuda (10).

Gender-specific cancers accounted for 61% of cancers in women (Table 3) compared to 47% in men (Table 2), reflecting the huge influence of the gender-specific cancers. Cancers of the bowel were more evenly spread among the genders, 8.4% of cancers in men compared to 8.3% among women. The trend of breast cancer as the leading cancer among women and prostate cancer among men reflects the patterns seen in Barbados (9). Skin cancers were frequently diagnosed during the period of this study with the higher rates in men reflecting higher levels of sun exposure in a susceptible light skinned (less pigmented) segment of the population (10). However, no information on race was available in this study. A few patients had more than one skin cancer, but each cancer was a primary cancer from a separate site. Higher incidence of skin and upper respiratory and alimentary cancers in men may represent higher levels of exposure to environmental carcinogens. In terms of incidence, lung cancer is the most common cancer in the world (7) but it does not appear in the top ten cancers in Antigua/Barbuda. Further studies would be needed to determine whether factors such as air quality and low rates of smoking are significant factors leading to Antigua/Barbuda's very low lung cancer incidence.

Most cancers were diagnosed in later life, which is in keeping with world trends (11, 12). The median age at diagnosis of cancer in the present study was considerably lower among women than men, 59 years as opposed to 68 years, reflecting a greater impact on the working population of women.

Cancer of the cervix, preventable and curable in the early stages (13), ranks high among the cancers diagnosed. Hence, resources need to be focussed on these areas with the greater likelihood of reducing morbidity and mortality. Additionally, this study highlights that Antigua and Barbuda, like the rest of the Caribbean, needs to improve the capture and completeness of data (14, 15). This would be greatly facilitated by the establishment of a cancer registry in Antigua and Barbuda.

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