

# A Thirty-year Review of Vulvar Cancer in Jamaica, 1978 to 2007

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## ABSTRACT

**Objective:** To evaluate the trends in vulvar cancer between 1978 and 2007 in Kingston and St Andrew, Jamaica, with respect to age-standardized rates and histologic types.

**Methods:** All cases of vulvar cancer recorded in the Jamaica Cancer Registry from 1978 to 2007 were extracted and analysed for age distribution and histologic type.

**Results:** There were 78 cases (one person of unknown age) of vulvar cancer recorded over the 30-year period. Sixty per cent of the affected patients were between 50 and 80 years old. The most common histologic type of vulvar malignancy was squamous cell carcinoma (82%). There was a decline in age-standardized incidence rates of both vulvar cancers overall and vulvar squamous cell carcinoma over the 30-year period.

**Conclusion:** Squamous cell carcinoma is the most common vulvar malignancy in the Jamaican population, and affects primarily older women. Despite high prevalence rates of high-risk human papillomavirus infection, no increase in the age-standardized incidence of vulvar squamous cell carcinoma was identified.

**Keywords:** Female genital tract, Jamaica, squamous cell carcinoma, vulvar cancer

# Revisión de Treinta Años de Cáncer Vulvar en Jamaica de 1978 a 2007

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## RESUMEN

**Objetivo:** Evaluar las tendencias del cáncer vulvar entre 1978 y 2007 en Kingston y Saint Andrew, Jamaica, con respecto a las tasas estandarizadas por edad y tipos histológicos.

**Métodos:** Todos los casos de cáncer vulvar registrados en el Registro de Cáncer de Jamaica de 1978 a 2007, se extrajeron y analizaron en cuanto a su distribución por edad y tipo histológico.

**Resultados:** Hubo 78 casos (una persona de edad desconocida) de cáncer vulvar registrados en un período de 30 años. El sesenta por ciento de los pacientes afectados tenía entre 50 y 80 años de edad. El tipo histológico más común de neoplasia vulvar fue el carcinoma de células escamosas o espinocelular (82%). Se observó un descenso en las tasas de incidencia estandarizadas por edad tanto de los cánceres vulvares en general como en los carcinomas espinocelulares vulvares durante el período de 30 años.

**Conclusión:** El carcinoma de células escamosas es la neoplasia vulvar más frecuente en la población jamaicana, y afecta principalmente a las mujeres mayores de edad. A pesar de las altas tasas de prevalencia de infección de alto riesgo por el virus del papiloma humano, no se identificó ningún aumento en la incidencia estandarizada por edad en relación con el carcinoma espinocelular vulvar.

**Palabras claves:** Aparato genital femenino, Jamaica, carcinoma de células escamosas, cáncer vulvar

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## INTRODUCTION

Vulvar cancer is a relatively rare disease with an estimated 27 000 new cases per year globally (1, 2), accounting for approximately 4–8% of all gynaecologic cancers (1, 3). The most common type of malignancy affecting the vulva is

squamous cell carcinoma (SCC), accounting for approximately 90% of cases (1, 4). Other malignancies include malignant melanoma and basal cell carcinoma (1). Vulvar cancer affects primarily older women, illustrated by a peak incidence in women over 85 years in the United Kingdom (UK) and a mean age in the United States of America (USA) of 68 years (1, 2).

Recent studies from the USA, UK and other countries have shown increases in the incidence of vulvar cancer over the last 30 years (1, 2, 5, 6), and this increase has been documented in both younger and older women (1, 2, 5). In some studies, increased rates of vulval intra-epithelial neoplasia (VIN) and human papillomavirus (HPV) infection (risk factors for the development of squamous cell carcinoma) have been implicated in the increased incidence in younger patients (1, 5, 6).

A previous report indicated that a decline in poverty was associated with a decrease in HPV-related malignancies such as vulvar cancer in Jamaica (7). We therefore reviewed cases of vulvar cancers recorded in the Jamaica Cancer Registry (JCR) over the 30-year period 1978–2007 in order to document the trends present in our population.

## SUBJECTS AND METHODS

The records of the Jamaica Cancer Registry (JCR) were reviewed retrospectively for the period 1978 to 2007 and all cases of vulvar cancer were retrieved. For each case, patient age at diagnosis, year of diagnosis and histologic subtype were collated. Squamous cell carcinomas were further categorized into invasive and *in situ* groups, with tumours exhibiting both *in situ* and invasive components being categorized as invasive disease. The data were used to calculate frequencies, proportions and age-standardized rates (ASRs), standardized to the World Standard Population. Population denominators were obtained from the Statistical Institute of Jamaica.

## RESULTS

A total of 78 patients with vulvar cancer were identified in the records of the JCR between 1978 and 2007. Patients ranged in age from 25 to 93 years, with the majority being between 50 and 80 years of age (Fig. 1). The age of one patient was unknown.

Squamous cell carcinoma was the most common malignancy, accounting for 64 (82%) cases (Fig. 2). Other types of vulvar malignancy included basal cell carcinoma (5%), melanoma (3%), Paget's disease (3%) and malignant nodular hidradenoma (1%). In 4% of cases, the histology was documented as carcinoma, not otherwise specified (NOS), one case was reported as poorly differentiated carcinoma (1%) and another as malignancy, NOS (1%). The latter case was represented by the patient whose age was unknown.

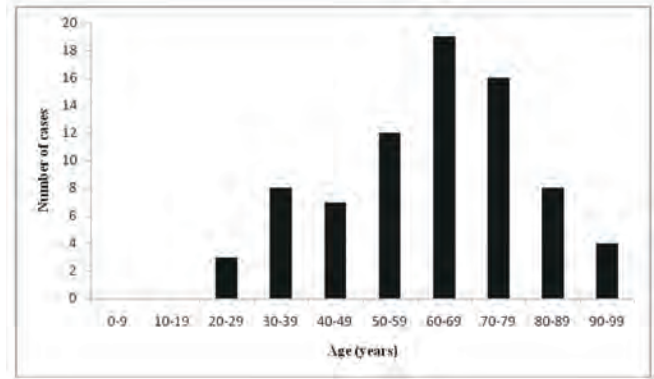


Fig. 1: Age distribution of vulvar cancer.

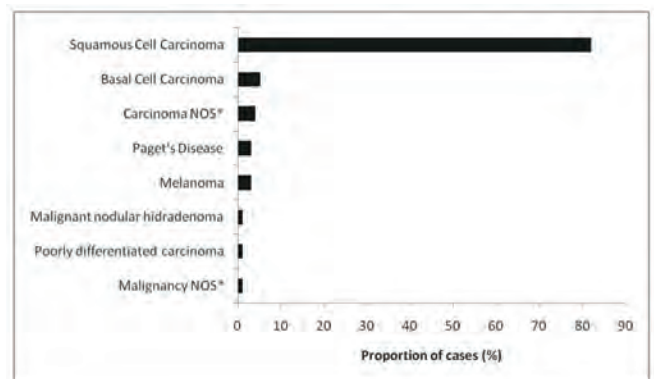


Fig. 2: Histologic sub-types of vulvar cancer, 1978–2007.

NOS = not otherwise specified.

Of the 64 cases of squamous cell carcinoma, six (9%) were *in situ* and 58 (91%) were invasive. Patients with *in situ* SCC ranged in age from 30 to 69 years (Fig. 3)

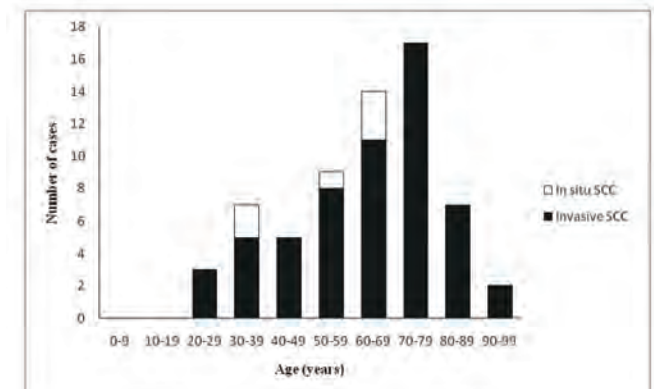


Fig. 3: Age distribution of *in situ* and invasive squamous cell carcinoma (SCC).

Figure 4 illustrates that the highest ASRs for all cancers and for SCC of the vulva (1.6 per 100 000/year each) occurred in the 1983–1987 reporting period. This was fol-

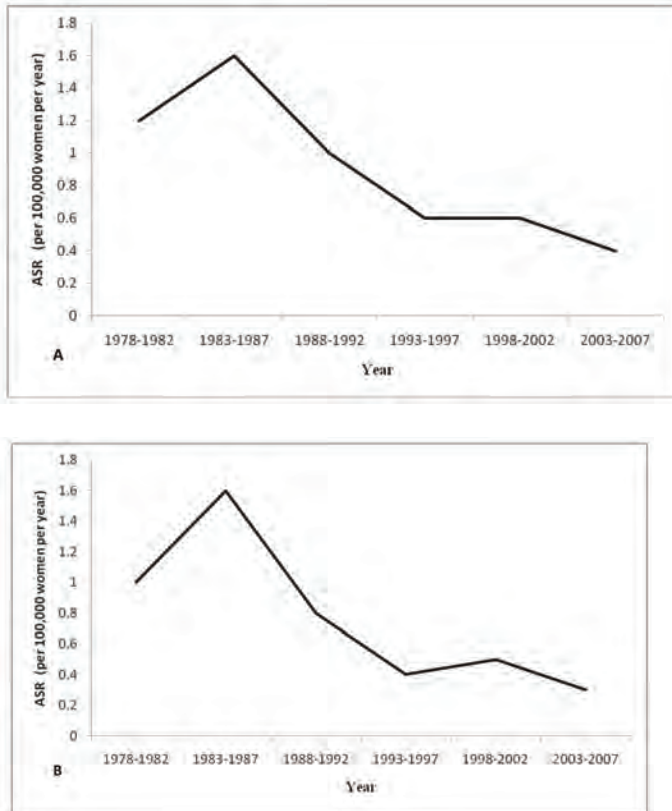


Fig. 4: Age-standardized rates (ASRs) of (A) all vulvar cancers and (B) vulvar squamous cell carcinoma, 1978–2007.

lowed by progressive decline thereafter to their current values of 0.4 and 0.3 per 100 000/year, respectively (2003–2007 reporting period).

## DISCUSSION

Jamaica has a population of approximately 2.7 million people, with a majority living in urban areas (53.9%) and approximately 1.4 million (53.9%) below the age of 30 years (8). There is a slight female predominance and most people (92.1%) are of African ethnicity (8).

In this study, squamous cell carcinoma was the most common histologic type of vulvar cancer identified (82%), similar to reports from other countries indicating squamous cell carcinoma as the most common type of vulvar malignancy (1, 4). Most cases of SCC were invasive (91%). Basal cell carcinoma was the next most frequent malignancy (5%) followed by melanoma (3%) and Paget's disease (3%). Basal cell carcinoma is a very common cutaneous malignancy, however, vulvar involvement is quite uncommon (9). The incidence of vulvar melanoma in Europe and the USA, although generally low (10, 11), has been reported as being lower in black compared with white patient populations (12). The age distribution of vulvar cancer in this study (60% of cases between 50 and 80 years old) is similar to that reported in the UK and USA (1, 2). However, whereas there are international reports of an increase in the number of younger

women affected by the disease (6, 13), this was not seen in our study.

Review of the literature shows that risk factors for vulvar cancer include: advanced age, HPV infection, smoking, HIV, VIN, lichen sclerosus, cervical cancer and atypical melanocytic naevi (1, 3). Two pathways have been recognized in the development of vulvar squamous cell carcinoma. In the first, HPV plays an aetiologic role in the development of VIN which progresses to invasive SCC. The second pathway does not involve HPV and results in intra-epithelial dysplasia and differentiated VIN, often associated with lichen sclerosus and other vulvar dermatoses. The consequent SCCs differ in epidemiology, clinical and pathological features (4, 14, 15).

Early stage disease, smoking, HPV and VIN have been associated with vulvar cancer in younger women (13). In the US population, HPV 16 is the most prevalent serotype associated with vulvar cancers (16). The most common high-risk HPV serotypes found in Jamaican women are HPV 45, 58, 16, 35, 18, 52 and 51 in order of decreasing frequency (17). Although a high prevalence of multiple and high-risk HPV infections of the cervix has been reported in Jamaican women (17), no studies have documented the prevalence of HPV serotypes in vulvar lesions in Jamaica.

An increase in the incidence of *in situ* SCC of the vulva has been documented (6, 18) and early stage vulvar cancers and HPV infection have been associated with younger women (13). In this study, however, only six cases (9%) were diagnosed as *in situ* squamous cell carcinoma.

The peak (1983–1987 reporting period) and current ASRs for vulvar cancer in our study, 1.6 and 0.4 per 100 000/year, respectively, are lower than those reported in the UK (2.5 per 100 000/year) and USA [2.3 per 100 000/year] (1, 2). This may be partially due to the ethnic composition of the Jamaican population [92.1% Black] (8). Studies from the USA and Brazil describe vulvar cancers as being more common in white (2.5/100 000) compared with black populations [1.8/100 000] (2, 18, 19), although in some studies, this difference was not evident in younger women (18, 20).

This study demonstrates a decline in the age-standardized rate of vulvar cancer in Jamaica over the 30-year period, contrary to that reported elsewhere, where overall ASRs have been increasing (1, 2, 5, 6). Epidemiologic studies have demonstrated an association between lower socio-economic status and risk of vulvar cancer (1, 19), and a previous Jamaican study reported a decrease in the incidence of HPV-related cancers of the vulva and penis, which was attributed to a reduction in poverty (7). We are uncertain of the contribution of socio-economic status to the decreasing trend in age-standardized rates of vulvar SCC seen in our study.

In conclusion, this study confirms that in the Jamaican population, squamous cell carcinoma is the most common vulvar malignancy and affects primarily older women. Despite high prevalence rates of high-risk HPV infection in

the Jamaican population, no increase in the age-standardized rate of vulvar squamous cell carcinoma was identified. This may reflect the small size of this study population, the predominantly black ethnicity and variations in HPV serotypes among different populations.

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