Gynecologic Oncology 130 (2013) 652–659

Contents lists available at SciVerse ScienceDirect

Gynecologic Oncology

journal homepage: www.elsevier.com/locate/ygyno

Review

Disparities in uterine cancer epidemiology, treatment, and survival among African Americans in the United States

B. Long [a], F.W. Liu [b,*], R.E. Bristow [b]

[a] Department of Obstetrics and Gynecology, University of California at Irvine Medical Center, Orange, CA, USA
[b] Division of Gynecologic Oncology, Department of Obstetrics and Gynecology, University of California at Irvine Medical Center, Orange, CA, USA

HIGHLIGHTS

- Compared to Caucasian women, African American women have lower incidence of uterine cancer but almost twice the mortality rates.
- Treatment outcome disparities are not explained fully by differences in comorbidities and access to care.
- Further research is necessary to eliminate racial disparities in uterine cancer.

ARTICLE INFO

Article history:
Received 14 April 2013
Accepted 16 May 2013
Available online 23 May 2013

Keywords:
Uterine cancer
Race
Health disparities

ABSTRACT

Objective. The objective of this article is to comprehensively review the scientific literature and summarize the available data regarding the outcome disparities of African American women with uterine cancer.

Methods. Literature on disparities in uterine cancer was systematically reviewed using the PubMed search engine. Articles from 1992 to 2012 written in English were reviewed. Search terms included endometrial cancer, uterine cancer, racial disparities, and African American.

Results. Twenty-four original research articles with a total of 366,299 cases of endometrial cancer (337,597 Caucasian and 28,702 African American) were included. Compared to Caucasian women, African American women comprise 7% of new endometrial cancer cases, while accounting for approximately 14% of endometrial cancer deaths. They are diagnosed with later stage, higher-grade disease, and poorer prognostic histologic types compared to their Caucasian counterparts. They also suffer worse outcomes at every stage, grade, and for every histologic type. The cause of increased mortality is multifactorial. African American and white women have varying incidence of comorbid conditions, genetic susceptibility to malignancy, access to care and health coverage, and socioeconomic status; however, the most consistent contributors to incidence and mortality disparities are histology and socioeconomics. More robust genetic and molecular profile studies are in development to further explain histologic differences.

Conclusions. Current studies suggest that histologic and socioeconomic factors explain much of the disparity in endometrial cancer incidence and mortality between white and African American patients. Treatment factors likely contributed historically to differences in mortality; however, studies suggest most women now receive equal care. Molecular differences may be an important factor to explain the racial inequities. Coupled with a sustained commitment to increasing access to appropriate care, on-going research in biologic mechanisms underlying histopathologic differences will help address and reduce the number of African American women who disproportionately suffer and die from endometrial malignancy.

Contents

* Corresponding author at: 101 The City Drive South, Bldg 56, Ste 800, Orange, CA 92868, USA. Fax: +1 714 456 6632.
E-mail address: fong.liu@uci.edu (F.W. Liu).

0090-8258/$ – see front matter
http://dx.doi.org/10.1016/j.ygyno.2013.05.020

Introduction

African Americans fare worse than whites across a spectrum of diseases, including diabetes, heart disease, and various malignancies. Gynecologic cancers are not immune to this phenomenon [1]. Endometrial cancer exhibits particularly striking racial differences. Despite a 30% decreased incidence among African Americans, those who are diagnosed with endometrial cancer are 2.5 times more likely to die than their Caucasian counterparts [2]. Though the explanation for this is likely multi-factorial, histopathologic disparities, with aggressive subtypes more common in African Americans, and socioeconomic differences, causing decreased access to healthcare among minority patients, are often assigned the largest roles. Other studies have examined molecular and genetic alterations, increased prevalence of comorbidities, and inconsistencies in treatment patterns among different races in an attempt to explain the inequalities. The purpose of this review is to examine the current literature in order to identify clinical, biological, and socioeconomic areas where disparities exist and identify ways to address these inequalities. Forty-two studies were initially identified, and 24 were reviewed after exclusion of studies that did not specifically address the disparities between African Americans and Caucasians with endometrial cancer. The reviewed studies had a total of 366,299 cases of endometrial cancer (337,597 Caucasian and 28,702 African American) (Table 1).

Incidence

Though African American women have a 7% lower incidence rate of all cancers when compared to white women, their overall cancer-related death rate is 17% higher. This discrepancy is seen in a variety of cancers including breast cancer and colorectal cancer [3,4]. In endometrial cancer, the disparity is considerably more pronounced. The incidence in African Americans is 30% lower and the mortality rate 80% higher when compared to whites [1]. Fig. 1 shows the trend in incidence and mortality of endometrial cancer in the United States over the last decade [5]. Several studies utilizing large databases have shown the disparate incidence of uterine cancer among different races. One study of SEER data from 1992 to 1998, including 1844 African American and 16,512 Caucasian women, found the overall incidence of endometrial cancer in African Americans to be 65% of that in Caucasians, while the incidence rates of more aggressive subtypes (serous and clear cell adenocarcinomas and sarcomas) in African American patients were 1.56 to 2.33 times those seen in whites [6]. The Multiethnic Cohort Study found overall incidence in African Americans to be 76% of that in whites but found African American rates of more aggressive subtypes to be over three times higher [7], confirming findings from other studies [8,9]. A more recent study examining trends in endometrial cancer incidence from 1999 to 2006 found an even larger gap in incidence with African American women representing only 6.8% of all endometrial cancers and 17.4% of type II endometrial cancers [10]. This dramatic difference in incidence rates (when compared to other studies in this review) is presumably due to the 60.9% increase in incidence of type I endometrial cancer (where African Americans are under-represented) observed during the study period. Type II cancers (where African Americans are disproportionally represented) did not significantly increase during this time. A sustained increase in type I endometrial cancer will further widen the gap in incidence between Caucasian and African American populations.

Histopathologic factors and stage at presentation

Five population-based studies and one large single-institution study documented the racial disparity in endometrial cancer histology and

Table 1
Cases of endometrial cancer by study and race.

Study	Study type	African American (N)	Caucasian (N)
Sherman et al. [6]	SEER (1992–1998)	1844	16,512
Setiawan et al. [7]	Prospective cohort	55	104
Hicks et al. [9]	National Cancer Database (1988–1994)	3226	52,307
Duong et al. [10]	National Program of Cancer Registries and SEER (1999–2006)	10,969	143,406
Wright et al. [11]	SEER (1988–2004)	5564	69,956
Smotkin et al. [12]	Single-institution	308	382
Oliver et al. [13]	Department of Defense Tumor Registry (1990–2003)	183	2057
Al-Wahab et al. [14]	Multi-institution	107	65
Fleury et al. [15]	Single-state population database	989	4173
Risinger et al. [16]	Single-institution	34	99
Maxwell et al. [19]	Single-institution	62	78
Basil et al. [20]	Single-institution	39	189
Kohler et al. [21]	Single-institution	47	129
Clifford et al. [22]	Single-institution	44	117
Santin et al. [24]	Single-institution	10	17
Allard et al. [25]	Single-institution	26	105
Ferguson et al. [26]	Single-institution	14	25
Maxwell et al. [27]	Clinical trial	110	1049
Fedewa et al. [31]	National Cancer Database (2000–2001)	3071	30,495
Madison et al. [32]	SEER (1990–1998)	488	3168
Matthews et al. [33]	Single-institution	229	153
Olson et al. [35]	SEER-Medicare (2005–2005)	958	11,610
Trimble et al. [36]	SEER (1998)	156	419
Farley et al. [37]	Clinical trial	169	982
Total	*366,299*	*28,702*	*337,597*