

# Obesity in Obstetrics and Gynecology- an Update on Disease-Specific and Treatment-Specific Influences

Nisha Rani Jamwal, Kumar Senthil P.\*\*, Vijaya Revankar\*\*\*, Eva Chris\*\*\*\*

## Abstract

The objective of this short communication paper was to address the implications of obesity in obstetrics and gynecology through an evidence-informed integrative overview of literature searched from PubMed database, on disease-specific and treatment-specific effects. Studies demonstrated disease-specific influence of obesity in women with cervical cancer, breast cancer, gynecological cancer (ovarian cancer, endometrial cancer), and treatment-specific influence for procedures such as laparascopy, fat mobilization system and Jejuno-ileal bypass surgery. There is need for future longitudinal cohort studies in women to explore the predictive factors for obesity and its consequences in obstetric and gynecological health and disease.

**Keywords:** Metabolic gynecology; Gynecological obesity; Gynecological cancer; gynecological endocrinology.

## Introduction

Obstetrically, obesity was often associated with sterility, excess weight leading to maternal and/or fetal complications during pregnancy, and gynecologically, obesity was associated positively with tumours and menopause in aged women.[1] Dieting behaviors and nutrition influence development of anorexia, bulimia and obesity which have an enormous impact on the

gynecologic health and disease (oligomenorrhea or irregular menses; anovulation and hyperandrogenism; polycystic ovary syndrome) in women.[2] The objective of this short communication paper was to address the implications of obesity in obstetrics and gynecology through an evidence-informed integrative overview of literature searched from PubMed database, on disease-specific and treatment-specific effects.

## Disease-specific influence

### Cervical cancer

Screening for cervical cancer among women was influenced by obesity, and obese women were less likely to have had a recent Papanicolaou test and/or mammography than their non-obese counterparts.[3]

### Breast cancer

Screening for breast cancer by mammography was also influenced by obesity and gynecological history. Compared with their counterparts, the obese women had delayed return of mammography resolution or follow-up whilst more women who had undergone hysterectomy returned promptly for diagnostic follow-up studies.[4]

### Endometrial cancer

Obesity was associated with decreased scores on physical domain of FACT-G and SF-36 in women with early stage endometrial cancer which

Maharishi Markandeshwar Institute of Physiotherapy and Rehabilitation (Maharishi Markandeshwar University, Mullana-Ambala, Haryana

Nisha Rani Jamwal, Post-Graduate Student

Senthil P. Kumar, Professor & Principal

Kasturba Medical College (Manipal University, Mangalore, Karnataka,

Vijaya Revankar, Consultant in OBG & Associate Professor, Dept. of Obst. & Gyne.

Manipal College of Nursing (Manipal University), Mangalore, Karnataka,

Eva Chris, Assistant Professor (Sr. Scale), Dept. of OBG Nursing

Senthil P. Kumar,  
E - m a i l :  
senthilparamasivamkumar@gmail.com

indicated that women with early endometrial cancer had similar changes in QOL as those who received surgery for benign disease.[5]

#### *Gynecological cancer*

Endocrine factors play a major role in development of gynecological neoplasias which might be best understood in terms of role of adipose tissue and androgens on globulin production thereby influencing levels of active steroids in endometrial and mammary tissues.[6]

Obesity increased the risk for endometrial cancer, ovarian cancer, cervical cancer (adenocarcinoma), vulvar cancer by increasing the endogenous estrogen levels which in turn affects glucose metabolism, through its effects on the wide range of adipocytokines and inflammatory mediators produced by adipose tissue among obese individuals.[7]

Obesity profoundly increased the incidence of endometrial cancer, through the effects of unopposed increased estrogen levels, and modestly increased the incidence of premenopausal ovarian cancer and might potentially increase incidence of cervical cancer, perhaps as a result of the impact on glandular cancers or decreased screening compliance. Obese women had decreased survival, increased surgical complications and also radiation-associated complications.[8]

Surgical outcomes in gynecological oncology (cervical, endometrial, and ovarian cancer) depend upon intra- and postoperative complications, extent of lymphadenectomy, negativity of the specimens' margins, and percentage of optimal debulking between obese and non obese patients affected by malignancies.[9] On the contrary, obesity was found not to affect the number of retrieved lymph nodes and the rate of intraoperative complications following lymphadenectomy in gynecologic cancers.[10]

Healthcare providers' practices and attitudes such as self-perceptions of obesity, discussion about weight may harm patient-provider relationship, understanding the importance of lifestyle interventions, and

professional expertise, importance of obesity education, and referral to obesity management interventions influence outcomes of obese women with gynecological cancer.[11]

#### *Polycystic ovarian disease*

In polycystic ovarian disease (PCOD), obesity played an important role in climacteric women whose redistribution of adipose tissue had occurred with increase in visceral fat deposits, which is a cardiovascular risk factor that could be effectively controlled by diet and regular physical activity.[12]

#### *Treatment-specific influence*

Obesity influenced surgical operation difficulty in laparoscopic procedures, and in abdominal adhesion grade, but not on estimated blood loss, operating time, operative complications, postoperative complications, hospital stay, rate of conversion to laparotomy.[13] Outcomes of other treatments such as fat mobilization system[14] and Jejunio-ileal bypass surgery[15] were also demonstrated to be influenced by obesity.

Studies demonstrated disease-specific influence of obesity in women with cervical cancer, breast cancer, gynecological cancer (ovarian cancer, endometrial cancer), and treatment-specific influence for procedures such as laparascopy, fat mobilization system and Jejunio-ileal bypass surgery. There is need for future longitudinal cohort studies in women to explore the predictive factors for obesity and its consequences in obstetric and gynecological health and disease.

#### **References**

1. Grio R, Porpiglia M. Obesity: Internal medicine, obstetric and gynecological problems related to overweight. *Panminerva Med.* 1994; 36(3): 138-41.
2. Seidenfeld ME, Rickert VI. Impact of anorexia, bulimia and obesity on the gynecologic health of adolescents. *Am Fam Physician.* 2001; 64(3): 445-50.

3. Aldrich T, Hackley B. The impact of obesity on gynecologic cancer screening: an integrative literature review. *J Midwifery Womens Health*. 2010; 55(4): 344-56.
4. Fair AM, Wujcik D, Lin JM, Grau A, Wilson V, Champion V, *et al*. Obesity, gynecological factors, and abnormal mammography follow-up in minority and medically underserved women. *J Womens Health (Larchmt)*. 2009; 18(7): 1033-9.
5. vonGruenigen VE, Gil KM, Frasure HE, Jenison EL, Hopkins MP. The impact of obesity and age on quality of life in gynecologic surgery. *Am J Obstet Gynecol*. 2005; 193(4): 1369-75.
6. Maggino T, Pirrone F, Velluti F, Bucciante G. The role of the endocrine factors and obesity in hormone-dependent gynecological neoplasias. *Eur J Gynaecol Oncol*. 1993; 14(2): 119-26.
7. Webb PM. Obesity and gynecologic cancer etiology and survival. *Am Soc Clin Oncol Educ Book*. 2013; 2013: 222-8.
8. Modesitt SC, van Nagell JR Jr. The impact of obesity on the incidence and treatment of gynecologic cancers: a review. *Obstet Gynecol Surv*. 2005; 60(10): 683-92.
9. Papadia A, Ragni N, Salom EM. The impact of obesity on surgery in gynecological oncology: A review. *Int J Gynecol Cancer*. 2006; 16(2): 944-52.
10. Salman MC, Usubutun A, Ozlu T, Boynukalin K, Yuce K. Obesity does not affect the number of retrieved lymph nodes and the rate of intraoperative complications in gynecologic cancers. *J Gynecol Oncol*. 2010; 21(1): 24-8.
11. Jernigan AM, Tergas AI, Satin AJ, Fader AN. Obesity management in gynecologic cancer survivors: provider practices and attitudes. *Am J Obstet Gynecol*. 2013; 208(5): 408.e1-8.
12. Milewicz A, Jedrzejuk D. Clinical aspects of obesity in the gynecological endocrinologically practice. *Maturitas*. 2007; 56(2): 113-21.
13. Bai SW, Lim JH, Kim JY, Chung KA, Kim SK, Park KH. Relationship between obesity and the risk of gynecologic laparoscopy in Korean women. *J Am Assoc Gynecol Laparosc*. 2002; 9(2): 165-9.
14. Griro R, Porpiglia M. Efficacy of Fat Mobilisation System (FMS) in the treatment of obesity and its utility in the resolution of gynecological problems related to overweight. *Panminerva Med*. 1994; 36(3): 142-8.
15. Hey H, Niebuhr-Jørgensen U. Jejunio-ileal bypass surgery in obesity. Gynecological and obstetrical aspects. *Acta Obstet Gynecol Scand*. 1981; 60(2): 135-40.

---

**Red Flower Publication Pvt. Ltd,**

## ***CAPTURE YOUR MARKET***

**For advertising in this journal**

**Please contact:**

**International print and online display advertising sales**

E-mail: redflowerpp1@vsnl.net / tel: +91 11 22754205, 45796900

**Recruitment and Classified Advertising**

E-mail: redflowerpp1@vsnl.net / tel: +91 11 22754205, 45796900

**Disclaimer** The opinion in this publication is those of the authors and is not necessarily those of the **Indian Journal of Obstetrics and Gynecology** the Editor-in-Chief and Editorial Board. Appearance of an advertisement does not indicate **IJOG** approval of the product or service.