

Breast cancer epidemiology in young women

Epidemiologija raka dojke kod mladih žena

Ivan Erić, Anamarija Petek Erić, Stana Pačarić*

Summary

Breast cancer is the most common malignancy in the population of women. Among young women, breast cancer incidence is 5-18% throughout different countries of the world. Young age for the appearance of breast cancer in woman is considered to be under 40 years of age. We wanted to research the epidemiologic data and incidence of breast cancer in a population of young women. This was a retrospective study. Data were gathered from medical documentation in the Department of Surgery of Clinical Hospital Centre Osijek. The total number of patients operated with breast cancer was (N = 1654) in period 2004-2011. Out of this number 71 (4.29 %) were < 40 years and 1583 (95.71%) were ≥ 40 years. The incidence trend in young women seems to be stable. Breast cancer incidence in the general population is increasing according to the National mammographic screening program.

Key words: breast cancer, incidence trend, mammographic screening

Sažetak

Rak dojke je najčešća maligna bolest u ženskoj populaciji. Učestalost raka dojke među mladim ženama je 5-18% na svjetskoj razini. Mladom ženom, s obzirom na karcinom dojke, smatra se žena mlađa od 40 godina. Željeli smo istražiti epidemiološke podatke i učestalost karcinoma dojke u populaciji mladih žena. Ovo je bila retrospektivna studija. Podaci su prikupljeni iz medicinske dokumentacije na Odjelu za kirurgiju, Kliničkog bolničkog centra Osijek. Ukupan broj bolesnica s karcinomom dojke koje su operirane, bio je (N = 1654) u razdoblju od 2004. do 2011. godine. Od ovoga broja 71 (4,29%) je imao < 40 godina, a 1583 (95,71%) ≥ 40 godina. Čini se da je trend pojavnosti kod mladih žena stabilan. Učestalost karcinoma dojke u općoj populaciji raste zbog Nacionalnog mamografskog programa probira.

Ključne riječi: karcinom dojke, trendovi incidencije, mamografski skrining

Med Jad 2020;50(2):125-127

Introduction

Breast cancer is the most common malignancy in the population of women and one of the leading causes of worldwide mortality in general.¹⁻³ It is rather rare among the population of young women but, nevertheless, the most common malignancy. Young age for the appearance of breast cancer in woman is considered to be under 40 years of age. Breast cancer among young women population is considered to be more aggressive, with distinct pathological features,

more positive axillary lymph nodes and poor prognosis.^{4,5} In the western countries of the world, the incidence of breast cancer in this population of women is 5-7%. This incidence is stable, without significant deviation.^{2,4} The Chinese authors define young women under the age of 35 years, with an incidence twice higher than in the western countries at level 10-18%, and increasing cancer growth in the past twenty years.⁶ About 2300 new breast carcinoma are diagnosed every year in Croatia (100/ 100.000) and more than 800 women die due to this cancer.⁷ Since 2006, Croatia

* **University J. J. Strossmayer Osijek, School of Medicine** (Ivan Erić, MD, PhD, Ass. prof. Anamarija Petek Erić, MD); **University Hospital Osijek** (Ivan Erić, MD, PhD, Ass. prof. Anamarija Petek Erić, MD; Stana Pačarić, bacc. med. techn.)

Correspondence address / *Adresa za dopisivanje:* Ivan Erić, J. Huttlera 4, 31000 Osijek, Croatia. E-mail: ivaneric1@gmail.com
Prilmljeno/Received 2019-10-07; Ispravljeno/Revised 2020-03-15; Prihvaćeno/Accepted 2020-03-17

adopted a national plan of early detection and prevention of breast cancer. Women between 50 and 69 years of age are undergoing mammographic screening.⁸

Our research is aimed to explore the epidemiologic data of breast cancer in young women in our region and recent incidence trends. We wanted to explore whether the National Prevention Programme had an impact on breast cancer incidence.

Materials and Methods

The study design was retrospective. The data were gathered out of medical documentation from patients who underwent surgical procedure between the year 2004 and 2011 at the Department of Surgery in KBC Osijek, Croatia. The patients were divided into two groups. The first group encompassed young women under 40 years of age at the time of surgery. The second group consisted of women aged ≥ 40 years at the time of surgery. All patients included in this study had positive pathological findings of invasive breast carcinoma. The number of women before and after 2007 was observed.

Statistical analysis was performed with SPSS 13.0 (Chicago, IL). For the comparison of patient groups, the Fisher exact test and χ^2 - test were used. The level of significance was set at $P < 0.05$.

Results

The total number of patients operated with breast cancer was 2000 (N = 2000). 89 patients (4.45 %) were < 40 years and 1911 (95.55%) were ≥ 40 years (Table 1).

There was no significant difference in the number of women with breast cancer according to age between 2002 to 2011. (Table 1).

The period from 2002 to 2007 had slightly more respondents < 40 years, 46 (51.7%). There were slightly more respondents over the age of 40 in the time frame of 2007 to 2011, 1087 of them (56.9%), however, without statistically significant difference (Table 2). Comparing to the period between 2002-2007, there were 263 more newly diagnosed cases of breast cancer in the period of 2007 to 2011 (Table 2).

Table 1 The distribution of patients by age
Tablica 1. Raspodjela pacijenata prema godinama

	Number (%) of patients with breast cancer <i>Broj pacijenata (%) s karcinomom dojke</i>			P*
	do 40	> 40	Total	
2002	11 (12.4)	149 (7.8)	160 (8)	0.18
2003	7 (7.9)	179 (9.4)	186 (9.3)	
2004	6 (6.7)	173 (9.1)	179 (9)	
2005	9 (10.1)	172 (9)	181 (9.1)	
2006	13 (14.6)	151 (7.9)	164 (8.2)	
2007	6 (6.7)	228 (11.9)	234 (11.7)	
2008	6 (6.7)	238 (12.5)	244 (12.2)	
2009	12 (13.5)	206 (10.8)	218 (10.9)	
2010	11 (12.4)	224 (11.7)	235 (11.8)	
2011	8 (9)	191 (10)	199 (10)	
Total	89 (100)	1911 (100)	2000 (100)	

* χ^2 - test

Table 2 The distribution of patients by age
Tablica 2. Raspodjela pacijenata prema godinama

	Number (%) of patients with breast cancer <i>Broj pacijenata (%) s karcinomom dojke</i>			P*
	< 40	≥ 40	Total	
2002-2006	46 (51.7)	824 (43.1)	870 (43.5)	0.13
2007-2011	43 (48.3)	1087 (56.9)	1130 (56.5)	
Total/Sveukupno	89 (100)	1911 (100)	2000 (100)	

* Fisher exact test/*Fisher točno ispitivanje*

Discussion

The researched period differentiated two trends among patient groups. Firstly, there was no significant change in the incidence of breast cancer in young women, not even after the implementation the National Programme in clinical practice. The second trend is the increased incidence of breast cancer of patients encompassed within the National Programme. Also, the decrease in incidence 4-5 years was after the first National Programme year. Globally, mostly in Western countries, the incidence of breast cancer increased in general but also among young women. This is especially significant in Spain, China, and Brazil.^{9,10} This could be explained with more organized mammographic screening in the older population worldwide. In the younger population, however, changes in lifestyle, a decline in fertility, and decreased mean age at menarche could be offered as possible explanations.⁹ In many Western countries, the incidence of breast cancer among young women has somewhat stabilized.^{11,12}

The increase of breast cancer incidence in Croatia is the product of the National Mammographic Screening Programme. Such results are observed in countries that developed similar programs. The plateau of incidence which is seen a few years after the target population was included in the mammographic screening is also well known. This happens because the pool of undiagnosed prevalent cases has reduced. Mammographic screening also covers carcinoma in situ and other pre-malignant lesions that would be discovered in a later period.¹³

Conclusion

Breast cancer incidence in the young population is low, 4-5%. The incidence trend in young women is stable.

Breast cancer incidence in the general population is increasing. The National Mammographic Screening Program is the main reason. We can also see a plateau and slightly decreasing few years after a National Programme has been induced.

Reference

1. Jacques Ferlay, Clarisse Héry, Philippe Autier, Rengaswamy Sankaranarayanan. Global Burden of Breast Cancer. In: Chistopher Li ed. Breast Cancer Epidemiology: Springer, 2009; p. 1-19.
2. Botha JL, Bray F, Sankila R, Parkin DM. Breast cancer incidence and mortality trends in 16 European countries. *Eur J Cancer* 2003;39:1718-29.
3. Jemal A, Ward E, Thun MJ. Recent trends in breast cancer incidence rates by age and tumor characteristics among U.S. women. *Breast Cancer Res* 2007;9:R28.
4. Yankaskas BC. Epidemiology of breast cancer in young women. *Breast Disease* 2005-2006;23:3-8.
5. Gabriel CA, Domchek SM. Breast cancer in young women. *Breast Cancer Res* 2010;12:212.
6. Chen W, Zheng R, Zeng H, Zhang S, He J. Annual report on status of cancer in China, 2011. *Chin J Cancer Res* 2015;27:2-12.
7. Kelava I, Tomićić K, Kokić M. Breast and gynecological cancers in Croatia, 1988-2008. *Croat Med J* 2012;53:100-8.
8. Andrea Šupe Parun. Nacionalni program ranog otkrivanja raka dojke. *HČJZ* 2011;7,28.
9. Pollán M. Epidemiology of breast cancer in young women. *Breast Cancer Res Treat* 2010;123 (Suppl 1):3-6.
10. Freitas Jr R, Freitas NM, Curado MP, et al. Incidence trend for breast cancer among young women in Goiânia, Brazil. *Sao Paulo Med J* 2010;128:81-4.
11. Tarone RE. Breast cancer trends among young women in the United States. *Epidemiology* 2006;17:588-90.
12. Brinton LA, Sherman ME, Carreon JD, Anderson WF. Recent trends in breast cancer among younger women in the United States. *J Natl Cancer Inst* 2008;100: 1643-8.
13. MacMahon B, Cole P. Is the incidence of breast cancer declining? *Epidemiology* 2008;19:268-9.

