A PRELIMINARY REPORT OF THE OSIJEK-BARANJA COUNTY, CROATIA, ON IMPLEMENTATION OF THE NATIONAL PROGRAM FOR BREAST CANCER SCREENING

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Summary

The incidence of breast cancer is rising among women in many European countries, affecting up to 1 in 16 women. In 2005 in Croatia, 2,303 women were affected by breast carcinoma with the incidence of 100.1/100,000. In 2006, 830 women, or 36.1/100,000 women died from breast carcinoma. In October 2006, a mammography screening program was launched as the first national-based cancer screening program in Croatia. In our paper, we described the first results of the screening program in the Osijek-Baranja County. The target population was women aged 50-69, about 41,678 women in the Osijek-Baranja County, with a two-year screening interval. All data collected until December 2007 were represented in contingency tables. Until December 2007, nearly 31,638 women were invited, and the participation rate was 51.0%. Based on the number of the reports to the County Public Health Institute, a total of 14,126 women underwent mammography, considering the fact that the reading and analysis of the mammograms takes about 20 days. For women born in 1937, 1954 and 1955, for whom the analysis is completed, the responding rate reaches 60.7%. The reason for non-responding to the screening is known for only 24.1% of all invited women. The most common reason was an incorrect address – 13.7%, and 4.6% of the invited women did not want to undergo screening. There were 204 cases (or 1.47%) of a suspected cancer (classified as BI-RADS 4 and 5), referred to prompt further diagnostics. Fifty-eight new cancer cases were diagnosed until 23 January 2008. Women of an older age responded less compared to women of a younger age. The main difficulty with inviting was a wrong address, which resulted in 2,129 women not responding to the invitation. The knowledge about benefits of all screening programs requires to be strengthened. For better results of the National Program, important are companionships of different sectors and communities (for example NGO).

KEY WORDS: *breast cancer, mammography, National Program*

PRVI REZULTATI NACIONALNOG PROGRAMA SKRININGA RAKA DOJKE U OSJEČKO-BARANJSKOJ ŽUPANIJI

Sažetak

Hrvatska se nalazi na visokom mjestu među europskim državama po proširenosti i smrtnosti od malignih bolesti. Iskustva razvijenih zemalja su pokazala da se implementacijom programa primarne prevencije i ranog otkrivanja raka, na nacionalnoj razini, može značajno smanjiti mortalitet od raka i poboljšati kvaliteta života oboljelih. U Hrvatskoj je 2. studenog 2006. god. započela primjena Programa skrininga raka dojke, kao dio prihvaćenog Nacionalnog programa prevencije i ranog otkrivanja raka najčešćih lokalizacija: dojke, debelog crijeva, vrata maternice i prostate.

U Hrvatskoj je rak dojke najčešće sijelo i vodeći uzrok smrti od raka u žena sa stopom incidencije od 100,1/100.000 žena (2005.) i stopom mortaliteta od 36,1/100.000 žena (2006).

U Osječko baranjskoj županiji je 2005. incidencija raka dojke iznosila 99,5/100.000, a mortalitet 43,6/100.000 (2006).

I incidencija i mortalitet od raka dojke u Hrvatskoj u stalnom su porastu. Linearni trendovi stopa incidencije i mortaliteta, za rak dojke, u Osječko-baranjskoj županiji, viši su od prosjeka za Hrvatsku. Prema stopi mortaliteta Osječko-ba-

ranjska županija se nalazi na visokom 4. mjestu među županijama u Hrvatskoj. Zbog toga bi uspješna implementacija Programa ranog otkrivanja raka dojke bila osobito značajna u toj županiji. Cilj ove prezentacije je prikazati prve rezultate (14 mjesečnog razdoblja) implementacije Programa skrininga raka dojke u Osječko-baranjskoj županiji, te razmotriti nedostatke, kao i moguće mjere za poboljšanje implementacije toga Programa.

Izvješće zaključno s danom 12. prosinca 2007. god. pokazuje da je mamografiju obavilo ukupno 14.126 žena, odnosno da je toliko pristiglih nalaza u Zavod za javno zdravstvo Osječko baranjske županije, ali treba uzeti u obzir da je za očitanje i obradu nalaza potrebno prosječno 20 dana. Ukupni odaziv je u Osječko-baranjskoj županiji na razini 60%, što je svrstava u županije s boljim odazivom. Za kompletno obrađena godišta, 1937, 1954 i 1955, odaziv je i veći i iznosi 60,7%. Od ukupnog broja snimljenih žena, njih 204 (1,47 %) je imalo nalaz BI-RADS 4 i 5, te su upućene na daljnju dijagnostičku obradu. Do 23. siječnja 2008. u Osječko-baranjskoj županiji je utvrđeno 58 novih slučajeva raka dojke.

Analizom odaziva, po godištima, kao i razloga neodazivanja na snimanje, može se uočiti da su žene najstarijeg, 1937. godišta, koje su i prve pozivane na snimanje, postigle najslabiji odaziv, češće su odgovorile da ne žele obaviti pregled, dok se žene mlađih godišta češće nisu javile na pregled. To upućuje na potrebu različitog pristupa motivaciji žena za skrining, s obzirom na dob, kao i vrijeme proteklo od početka primjene Programa. Naknadnim pozivanjem žena koje se nisu odazvale na snimanje, bilo poštom, bilo putem službe patronažnih sestara, povećao se broj žena koje su se odazvale na mamografiju. Važan razlog neodazivanja su i netočne adrese u osnovnom popisu stanovništva. To sve upućuje na potrebu boljih priprema za implementaciju skrining programa, uključujući pomnu pripremu medijske kampanje, ažuriranje popisa stanovništva, te bolju suradnju različitih segmenata zdravstvenog sustava, kao i zajednice u cjelini.

KLJUČNE RIJEČI: *rak dojke, mamografija, nacionalni program*

INTRODUCTION

For women in developed countries, rates of breast cancer have been rising over the last few decades. The incidence of breast cancer is rising among women in many European countries, affecting up to 1 in 16 women (1). In 2006 in Europe, the most common form of cancer was breast cancer (429,900 cases, 13.5% of all cancer cases), followed by colorectal (412,900, 12.9%) and lung cancer (386,300, 12.1%) (2). The estimates show the substantial burden of cancer in European Union populations, but there are also indications of effects of past preventive measures and there is scope for further intervention (2,3). There are several factors, which are known to affect the risk of breast cancer in the population. These include lifestyle factors (i.e. childbearing, breastfeeding, type of diet and obesity, use of alcohol and tobacco), hormonal status (influencing age at menarche and menstrual cycle, and determined by endogenous hormones, oral contraceptives use, and hormone replacement therapy), anthropometrics characteristics, radiation, and genetic predisposition (4, 5). Finally, mortality from breast cancer may be influenced by prevention (e.g. chemoprevention using tamoxifen or raloxifene) and screening (6, 7). In 2005 in Croatia, 2,303 women were affected by breast carcinoma, and the incidence was 100.1/ 100,000 (8). Meanwhile, breast carcinoma is the most common cause of death in women aged 35-64 (5). In 2006, 830 women, or 36.1/100,000 died from breast carcinoma (9). The early detection through screening, effective diagnostic pathways and optimal treatment have the ability to substantially lower the current breast cancer mortality rates and reduce the burden of this disease in the population. In order that these benefits may be obtained, high quality services are essential. The primary aim of a breast-screening program is to reduce mortality from breast cancer through early detection. In June 2003, the European Parliament called for establishment of a program by 2008 which should lead to a future 25% reduction in breast cancer mortality rates in the EU, and also a reduction to 5% in the disparity in the survival rates between member states (10). In the October of 2006, mammography screening program was launched as the first national-based cancer screening program in Croatia (11). In our paper we described the first results of the Screening Program in the Osijek-Baranja County.

METHODS

The target populations of the Screening Program are women aged 50-69, which is about 41,678

Table 1.

EVIDENCE TABLE FOR CLINICAL MANAGEMENT RECOMMENDATIONS FOR MAMMOGRAMS
BY BREAST IMAGING REPORTING AND DATA SYSTEM (BI-RADS) CATEGORY

BI-RADS Category	Assessment	Clinical Management Recommendation(s)	Strength of Recommendation	References	Comments on References
0	Assessment incomplete	Need to review prior studies and/or complete additional imaging	A	14	All or none study; consensus guidelines
1	Negative	Continue routine screening	A	14,15	Consensus guidelines; validated clinical decision tool
2	Benign finding	Continue routine screening	A	14,15	Consensus guidelines; validated clinical decision tool
3	Probably benign finding	Short-term follow-up mammogram at 6 months, then every 6 to 12 months for 1 to 2 years	B	14, 16, 15, 17–22	Consensus guidelines; cohort studies; large case series; validated decision tool; less patient stress; lowered costs with surveillance
4	Suspicious abnormality	Perform biopsy, preferably needle biopsy	A	14, 15, 17, 23, 24	All or none study; validated clinical decision tool
5	Highly suspicious of malignancy; appropriate action should be taken.	Biopsy and treatment, as necessary.	A	14, 15, 23, 24	All or none study; validated clinical decision tool
6	Known biopsy-proven malignancy, treatment pending	Assure that treatment is completed			

women in the Osijek-Baranja County, with a two-year screening interval. Women are invited by mail and asked to fill up a questionnaire about their family history of breast cancer, previously determined non-tumur or tumor breast disease and other risk factors. At the Institute of Public Health, a free telephone line is established on which 3 physicians and 2 nurses answer questions on screening and individually adjust timing of mammography. There are 4 mammography units, based in Našice, Đakovo and two in Osijek, participating in the Program. The Breast Imaging Reporting and Data System (BI-RADS), developed by the American College of Radiology, provides a standardized classification for mammography studies. That classification is used for reading of mammograms. Table 1 presents BI-RADS classifications and management recommendations as an evidence table. Classifications are divided into an incomplete assessment (category 0) and completed assessments (categories 1, 2, 3, 4, 5, 6) (12, 14). Although there are 7 assessment categories, only 4 outcomes are possible: additional imaging studies, routine interval mammography, short-term follow-up, and biopsy (13). The County Public Health Institute in collaboration with health centers, radiologyl units and family physicians car-

Table 2.

NUMBER OF WOMEN PARTICIPATING
IN THE SCREENING PROGRAM

	n	%
Invited	31638	
Participated in mammography screening	13922	44.0
Involved in mammography during last year	1644	5.2
Treated for breast cancer or some other breast disorder	584	1.8
Participation	16150	51.0

ries out the implementation of the Program on the local level. All data collected until December 2007 are represented in contingency tables.

RESULTS

Until December 2007, nearly 31,638 women were invited, and the participation rate was 51.0% (Table 2). A total of 14,126 women underwent mammography, based on the number of the reports to the County Public Health Institute, considering the fact that the reading and analysis of the mammograms takes about 20 days.

An average responding rate is on the level of 51.0%, ranking the Osijek-Baranja County high

Table 3.

PERCENTAGE OF WOMEN BORN IN 1937, 1954 AND 1955
PARTICIPATING IN THE SCREENING PROGRAM

County	Response
Bjelovarsko-bilogorska	82.50%
Međimurska	79.30%
Zadarska	72.80%
Istarska	62.70%
Požeško-slavonska	62.10%
Krapinsko-zagorska	61.50%
Osječko-baranjska	60.80%
Dubrovačko-neretvanska	59.80%
Virovitičko-podravska	59.80%
Brodsko-posavska	59.60%
Koprivničko-križevačka	59.50%
Vukovarsko-srijemska	53.70%
Sisačko-moslavačka	51.90%
Zagreb	51.40%
Primorsko-goranska	47.70%
Karlovačka	44.90%
Zagrebačka	43.80%
Ličko-senjska	43.40%
Šibensko-kninska	42.90%
Splitsko-dalmatinska	42.60%
Varaždinska	41.96%
CROATIA	53.60%

Table 4.

NUMBER OF WOMEN PARTICIPATING IN THE SCREENING
PROGRAM AND REASONS OF NON-RESPONSE - RESULTS
OF MAMMOGRAPHY, DATED 12/12/2007

	n	%
No response	15488	
Do not call on free phone line	11753	75.9
Rescheduled date of mammography	120	0.8
Other reasons	105	0.7
Do not want to undergo screening	706	4.6
Died	397	2.6
Wrong address	2129	13.7
Not Croatian redisent	278	1.8

among the counties of Croatia. For women born in 1937, 1954 and 1955, for whom the analysis is completed, the responding rate reaches 60.7% (Table 3). The reason for non-responding to the screening is known only for 24.1% of all invited women. The most common reason was a wrong address – 13.7% (Table 4); 4.6% of women did not want to undergo

Table 5.

THE SCREENING PROGRAM – BI-RADS RESULTS

	N	%
All	14126	100.00
BI-RADS 0	972	6.98
BI-RADS 1	4218	30.30
BI-RADS 2	7114	51.10
BI-RADS 3	1414	10.16
BI-RADS 4	191	1.37
BI-RADS 5	13	0.09
BI-RADS 4+5	204	1.47

screening. There were 204 cases (or 1.47%) of a suspected cancer (classified as BI-RADS 4 and 5), who have been referred to prompt further diagnostics (Table 5). Fifty-eight new cancer cases were diagnosed until 23 January 2008.

DISCUSSION

The mammography screening program is the first national-based cancer screening program in Croatia. The goal of the program is a response of 70% of the target population, which are women aged 50-69 with or without health insurance. Until December 2007 in the Osijek-Baranja County, the participation rate was 51.0%. Women of an older age were less responsive, compared to women of a younger age. This is probably a result of ignorance of the benefit of mammograms and their current health status (comorbidity) that may be disabling (for example ICV). Other factors such as knowledge, encouragement, health consciousness, physical factors, fear, cultural factors, social responsibilities, and logistical barriers affect on response rate (25, 26). Some authors have described positive influence of family history of any cancer on mammography screening behaviors (27). The main difficulty with inviting was a wrong address, which resulted in 2,129 women not responding to the invitation. The rate of suspicious results was lower than expected (11). Women with BI-RADS 0 must also be taken into consideration as they were referred to other diagnostics, most often clinical examination and ultrasonography.

CONCLUSION

Mammography is an important tool in the early diagnosis of breast cancer. It is necessary to

strengthen the knowledge about benefits of all screening programs. For better results of the National Program, companionships of different sectors and communities (for example NGO) are essential.

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