

Majčinstvo i dojenje nakon karcinoma dojke

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Motherhood and breastfeeding after breast cancer

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Sažetak

Uvod. Karcinom dojke je najučestaliji tumor u ženskoj populaciji. Zlatni standard u dijagnostici karcinoma dojke je mamografija u kombinaciji sa ultrazvučnim pregledom ili magnetnom rezonancom. Terapija može da obuhvati operativno lečenje, radioterapiju, hemioterapiju, hormonsku terapiju, ciljanu terapiju i imunoterapiju.

Prikaz bolesnika. U radu je prikazana pacijentkinja starosti 46 godina. Prvi put se javila na pregled 2007. godine kada je imala 30 godina i planirala drugu trudnoću. Samopregledom dojke napipala je čvor. Ultrazvučnim pregledom potvrđeno je prisustvo tumora. Nakon dijagnostike i preoperativne pripreme urađena je poštedna operacija leve dojke uz disekciju aksile zbog pozitivnih limfnih nodusa. Patohistološki nalaz je bio *Carcinoma mixtus praecipue ductale G2 et partim mucinosum G2*, dok je nalaz u limfnim nodusima aksile bio negativan. Hormonski status tumora bio je Estrogen 1, Progesteron 1, HER2 2. Pacijentkinja je primila hemioterapiju FAC u šest ciklusa i terapiju trastuzumabom u 16 ciklusa. Uključen je tamoksifen koji je bio u terapiji do decembra 2009. godine kada je usled brojnih cisti uklonjen desni jajnik i više cisti na levom jajniku. Pet godina nakon operacije karcinoma dojke pacijentkinja je zatrudnela i rodila devojčicu koju je dojila deset meseci iz neoperisane dojke.

Zaključak. Karcinom dojke je oboljenje koje znatno narušava reproduktivno zdravlje kod mlađih žena, pa je važno obratiti posebnu pažnju na želju pacijentkinje da rađa nakon lečenja i u skladu s tim sprovesti adekvatnu terapiju i savetovanje.

Ključne reči: trudnoća, hemioterapija, hormonska terapija, anti-HER2 terapija, cista jajnika

Abstract

Introduction. Breast cancer is the most prevalent cancer in women. The most reliable method to diagnose breast cancer is through mammography, combined with ultrasonography or magnetic resonance imaging. The treatment plan may include surgery, radiation therapy, chemotherapy, hormone therapy, targeted therapy, or immunotherapy.

Case report. The following is a case report of a 46-year-old woman who visited a physician in 2007 when she was planning her second pregnancy. She was 30 years old at the time. During a routine breast self-examination, she noticed a lump and was sent for an ultrasound examination where the tumor was confirmed. After diagnosis and preoperative preparation, she underwent breast-preserving surgery of the left breast, along with axilla dissection due to positive lymph nodes. Pathohistologic findings confirmed *Carcinoma mixtus praecipue ductale G2 et partim mucinosum G2*, while no metastatic changes were found in the axillary lymph nodes. The tumor's hormonal status was estrogen 1, progesterone 1, and HER2 2. The patient received six rounds of FAC chemotherapy followed by 16 rounds of trastuzumab. After starting on tamoxifen and using it until December 2009, she had to undergo the removal of her right ovary due to the discovery of numerous cysts. Several cysts were also found on the left ovary. Five years after her breast cancer surgery, the patient became pregnant and gave birth to a baby girl. She breastfed her for ten months from the breast that was not operated on.

Conclusion. Breast cancer is a serious illness that can greatly affect the reproductive health of young women. It is essential to take into account the patient's desire to have children after treatment. Therefore, it is crucial to provide appropriate therapy and counseling.

Keywords: pregnancy, chemotherapy, hormone therapy, anti-HER2 therapy, ovary cyst

Uvod

Karcinom dojke predstavlja najučestaliji tumor u ženskoj populaciji na svetskom nivou, a u manje od 1% slučajeva može se javiti i kod muškaraca¹. Nastaje bujanjem tkiva dojke, najčešće ćelija epitela izvodnih mlečnih kanala ili epitela žlezdanog tkiva. Ukoliko se karcinom svojim rastom zadrži u mlečnom kanalu, govorimo o intraduktalnom karcinomu (karcinom *in situ*) koji ima najbolju prognozu i većina žena se u ovom slučaju u potpunosti izleči. Kada se karcinom svojim rastom širi u okolno tkivo, regionalne limfne žlezde i udaljene organe, govori se o invazivnom karcinomu dojke. U oba slučaja radi se o adenokarcinomu dojke. Od velike je važnosti blagovremeno otkriti promene na dojci i započeti terapiju. To se postiže redovnim samopregledom dojki koji žene mogu obavljati kod kuće, kao i organizovanim skrining pregledima. Zlatni standard predstavlja mamografija u kombinaciji sa ultrazvučnim pregledom dojki.

Faktori rizika za pojavu karcinoma dojke kod žena su mnogostruki i u njih se ubrajaju starosna dob, pozitivna lična i porodična anamneza, genetska predispozicija (mutacije na genima BRCA1 i/ili BRCA2), reproduktivni faktori (rana menarha pre 12. godine, kasna menopauza posle 55. godine, kasni nuliparitet posle 30. godine, multipla trudnoća posle 35. godine, nedojenje nakon porođaja, nerađanje), nivo estrogena (upotreba kontraceptiva duže od deset godina i hormonske supstitucione terapije duže od pet godina) i stil života (konzumiranje alkohola, pušenje, zapadnjački način ishrane)^{2,3}.

U početnim stadijumima bolest ne mora davati nikakve simptome. U uznapredovalim stadijumima može doći do pojave kvržica u predelu dojke ili u pazušnoj jami, otoka dela ili cele dojke, bola u dojci, promena na koži dojke (udubljenja, suvoća, zadebljavanje, perutanje), promena na bradavici (uvučena bradavica, crvenilo, perutanje) i iscetka iz dojke koji nije mleko (krvav ili serozni). Svakako je prvo potrebno isključiti druge moguće uzročnike nekih od ovih simptoma kao što su tesna odeća, infekcije, hormonske promene, menstrualni ciklus, infekcije, nagle promene u telesnoj težini i dr.

Početna dijagnoza karcinoma dojke se postavlja upotrebom mamografije u kombinaciji sa ultrazvukom dojke. U nekim slučajevima koristi se i magnetna rezonanca (MR) kao dopunska dijagnostička procedura. MR sama po sebi nije dovoljna, jer ne prikazuje mikrokalcifikacije u dojkama i ponekad može dati lažno pozitivan nalaz⁴. Sledeći korak u postavljanju dijagnoze je korbopsija (biopsija širokom iglom) kojom se dobijaju podaci o tipu tumora, histološkom gradusu, kao i o prisustvu biomarkera (receptori za estrogen i progesteron, HER2 receptor) koji su važni za kreiranje optimalne terapijske strategije⁵.

Karcinomi dojke klasifikuju se po TNM klasifikaciji u zavisnosti od veličine tumora i zahvaćenosti okolnih tkiva (T), proširenosti na regionalne limfne čvorove (N), kao i širenja u udaljene organe i limfne čvorove (M). Na osnovu TNM

Introduction

Breast cancer is the most prevalent cancer in women worldwide and less than 1% occurs in men¹. It starts with breast tissue swelling, mostly epithelial cells of the outflow milk channels or glandular tissue cells. If the cancer is limited in the milk channel it is considered intraductal carcinoma (carcinoma *in situ*) and it has the best prognosis. The majority of women with this type of cancer get completely cured. While growing, cancer may spread to regional tissue, regional lymph nodes, and distant organs, and this type is considered invasive breast cancer. In both cases, these are breast adenocarcinomas. It is of great importance to make a timely diagnosis and start treatment. This may be achieved through regular self-examination of one's breasts, as well as organized screening programs. Mammography is the gold standard combined with ultrasonographic breast examination.

Risk factors for breast cancer in women are multiple and they may include age, personal or family history of breast cancer, genetic predisposition (BRCA1 and/or BRCA2 gene mutations), reproductive factors (early menarche, before the age of 12, late menopause, after the age of 55, late nulliparity, after the age of 30, multiple pregnancy, after the age of 35, not breastfeeding after delivery, not giving birth), estrogen level (use of contraceptives more than 10 years and hormone substitution therapy more than 5 years) and lifestyle (alcohol consumption, smoking, western diet)^{2,3}.

During the initial stages of breast cancer, there may be no noticeable symptoms. However, in the advanced stages, one may experience the appearance of lumps in the breast or armpit, swelling of the breast or a part of it, breast pain, changes in the breast skin (such as dents, dryness, thickening, or flaking), changes in the nipples (such as redness, flaking, or retraction), and breast discharge that is not milk (such as bloody or serous). It is important to note that some of these symptoms could also be caused by other factors such as tight clothes, hormonal changes, infections, sudden weight change, menstrual cycle, etc. Therefore, it is essential to rule out other possible reasons before considering breast cancer as a cause of the disease.

Initial diagnosis is made by mammogram examination often combined with breast ultrasonography. In some cases, magnetic resonance (NMR) is used as a supplementary diagnostic procedure. NMR alone is not enough because it doesn't show breast microcalcifications and sometimes it may produce false positive results⁴. The next diagnostic step is a core biopsy (using a large needle) which gives us data on the type of tumor, histological stage, as well as the presence of biomarkers (estrogen and progesterone receptors, HER2 receptor) which are important for the creation of optimal therapeutic strategy⁵.

Breast cancer is classified using TNM classification. Tumor size and spreading in the surrounding tissue (T),

klasifikacije izvršeno je grupisanje po stadijumima kojih ima pet (Tabela 1)⁶.

spreading to regional lymph nodes (N), as well as spreading to distant organs and lymph nodes (M). Based on TNM classification, they are grouped into five stages (Table 1)⁶.

Tabela 1. Stadijumi karcinoma dojke⁶

Table 1. Breast cancer stages⁶

STADIJUM/STAGE	T	N	M
Stadijum/Stage 0	Tis	N0	M0
Stadijum/Stage IA	T1b	N0	M0
	T0	N1mi	M0
	T1b	N1mi	M0
Stadijum/Stage IIA	T0	N1c	M0
	T1b	N1c	M0
	T2	N0	M0
Stadijum/Stage IIB	T2	N1	M0
	T3	N0	M0
Stadijum/Stage IIIA	T0	N2	M0
	T1b	N2	M0
	T2	N2	M0
	T3	N1	M0
	T3	N2	M0
Stadijum/Stage IIIB	T4	N0	M0
	T4	N1	M0
	T4	N2	M0
Stadijum/Stage IIIC	Bilo koji/Any T	N3	M0
Stadijum/Stage IV	Bilo koji/Any T	Bilo koji/Any N	M1

Tis - karcinom *in situ*; **T0** - nema dokaza o primarnom tumoru; **T1b** - tumor >5 mm, ali ≤10 mm; **T2** - tumor >20 mm, ali ≤50 mm; **T3** - tumor >50 mm; **T4** - tumor bilo koje veličine koji se proširio na zid grudnog koša ili kožu; **N0** - bez metastaza u regionalnim limfnim čvorovima; **N1** - metastaze prisutne u ipsilateralnom pazušnom limfnom čvoru (čvorovima) I i II nivoa koji je pokretan; **N1mi** - mikrometastaze >0,2 mm, ali <2 mm; **N1c** - metastaze u 1–3 pazušna limfna čvora, dok su u unutrašnjim limfnim čvorovima dojke prisutne mikrometastaze ili makrometastaze koje su detektovane sentinel biopsijom, a ne detektuju se kliničkim pregledom; **N2** - metastaze prisutne u ipsilateralnim pazušnim limfnim čvorovima I i II nivoa koji su fiksirani ili sliveni/metastaze u unutrašnjim limfnim čvorovima dojke koje se detektuju kliničkim pregledom, dok se u pazušnim limfnim čvorovima ne detektuju metastaze; **N3** - metastaze u ipsilateralnom infraklavikularnom pazušnom limfnom čvoru (čvorovima) III nivoa sa ili bez zahvatanja pazušnih limfnih čvorova I i II nivoa/klinički detektovane metastaze u ipsilateralnom unutrašnjem limfnom čvoru (čvorovima) dojke sa klinički detektovanim metastazama u pazušnim limfnim čvorovima I i II nivoa/metastaze u ipsilateralnom supraklavikularnom limfnom čvoru (čvorovima) sa ili bez zahvatanja unutrašnjih limfnih čvorova dojke; **M0** - bez udaljenih metastaza; **M1** - prisutne udaljene metastaze

Tis - carcinoma in situ; **T0** – no proof of primary tumor; **T1b** - tumor >5 mm, but ≤10 mm; **T2** - tumor >20 mm, but ≤50 mm; **T3** - tumor >50 mm; **T4** - tumor of any size which spreads to thoracic wall or skin; **N0** – no metastases in regional lymph nodes; **N1** – metastases present in ipsilateral under the arm lymph node (nodes) of I and II level, not movable; **N1mi** - micrometastases >0,2 mm, but <2 mm; **N1c** – metastases in 1–3 under the arm lymph nodes, while in the internal breast lymph nodes micro and macrometastases are discovered by using sentinel biopsy but not during clinical examination; **N2** – metastases present in ipsilateral under the arm lymph nodes of I and II level and are fixed or matted / metastases in internal breast lymph nodes, discovered by clinical examination, but not in under the arm lymph nodes; **N3** – metastases in ipsilateral infraclavicular under the arm lymph node (nodes) III level, with or without spreading to under the arm lymph nodes of I and II level / clinically discovered metastases in ipsilateral internal breast lymph node (nodes) with clinically discovered metastases in under the arm lymph nodes of I and II level / metastases in ipsilateral supraclavicular lymph node (nodes) with or without spreading to internal breast lymph nodes; **M0** – without distant metastases; **M1** – present distant metastases

Terapijski pristup u lečenju karcinoma dojke zavisi od stadijuma tumora i prisustva biomarkera. Lečenje karcinoma dojke može da obuhvata operativno lečenje, radioterapiju, hemioterapiju, hormonsku terapiju, ciljanu terapiju i imunoterapiju. Hirurška intervencija može biti poštedna, kada se uklanja samo tumor uz očuvanje što većeg dela dojke, i mastektomija prilikom koje se uklanja cela dojka. Radioterapija se može primeniti nakon hirurške intervencije kao adjuvantna terapija ili kod pacijenata sa inoperabilnim tumorom u poodmaklom stadijumu radi unapređenja kvaliteta života. Hemioterapija je terapija izbora kod većine trostruko negativnih karcinoma dojke gde receptori za estrogen i progesteron i HER2 receptori nisu prisutni⁷. Hormonska terapija primenjuje se kod hormon zavisnih karcinoma dojke (HR+) i ona podrazumeva primenu selektivnih modulatora estrogenskih receptora (SERM), selektivnih antagonista estrogenskih receptora (SERD), analoga gonadotropin-oslobađajućih hormona i inhibitora aromataze. Ciljana terapija za cilj ima da blokira signalne puteve koji ćelije karcinoma podstiču na rast i tu spadaju anti-HER2 lekovi, CDK4/6 inhibitori, mTOR inhibitori, PARP inhibitori i VEGF inhibitori. Trostruko negativni karcinomi dojke smatraju se najimunogenijim karcinomima, te je imunoterapija prvenstveno usmerena na njihovo lečenje primenom PD-1 inhibitora i PD-L1 inhibitora⁸.

Petogodišnje preživljavanje je najviše u najrazvijenim zemljama, pa se tako u vrhu liste nalaze Sjedinjene Američke Države (SAD) sa 90,2% i Australija sa 89,5%, dok je najniža stopa zabeležena u Indiji 66,1%⁹.

Prikaz bolesnika

U radu je prikazana pacijentkinja starosti 46 godina. Prvi put se javila lekaru na pregled 2007. godine kada je imala 30 godina i planirala drugu trudnoću. Prilikom rutinskog samopregleda dojke napipala je čvor. Izabrani lekar je utvrdio da je promena uočena paraareolaro levo, nisu napipani izmenjeni limfni nodusi u aksili. U porodičnoj anamnezi negira prisustvo tumora. Upućena je na ultrazvučni pregled na kom je potvrđeno prisustvo tumora. Nakon dijagnostike i preoperativne pripreme urađena je hirurška intervencija *Quadrantectomy mammae lateris sinistri cum evacuationem axillae*. Kako su limfni nodusi bili pozitivni 2/4, načinjena je disekcija aksile. Prečnik tumora je 18x13 mm. Patohistološki nalaz je glasio *Carcinoma mixtus praecipue ductale G2 et partim mucinosum G2*. U definitivnom nalazu limfnih nodusa aksile nije utvrđeno prisustvo metastatskih promena. Hormonski status tumora je Estrogen 1, Progesteron 1, HER2 2.

U daljem lečenju pacijentkinja je primila hemioterapiju FAC (fluorouracil, doxorubicin i ciklofosamid) u šest ciklusa i terapiju trastuzumabom u 16 ciklusa. Uključen je tamoksifen koji je bio u terapiji do decembra 2009. godine kada su utvrđene promene na jajnicima. Usled brojnih cisti

The therapeutic approach to breast cancer treatment depends on the stage of the tumor and the presence of biomarkers. Breast cancer treatment may include surgery, radiotherapy, chemotherapy, hormone therapy, targeted, and immunotherapy. Surgery may be salvageable when only the tumor is removed and the rest of the breast tissue is saved, and mastectomy is when the entire breast is removed. Radiotherapy may be introduced after surgery, as adjuvant therapy, or in patients with an inoperable tumor in the late stages in order to improve life quality. Chemotherapy is the therapy of choice in the majority of triple-negative breast cancers, where estrogen, progesterone, and HER2 receptors are not present⁷. Hormone therapy is applied in hormone-dependant breast cancers (HR+) and it includes the application of selective estrogen receptor modulators (SERM), selective estrogen re-ceptor degraders (SERD), gonadotropin-releasing hormone agonists, and aromatase inhibitors. The targeted therapy aims to block signal pathways that instigate the growth of cancer cells, and it includes anti-HER2 medications, CDK4/6 inhibitors, mTOR inhibitors, PARP inhibitors, and VEGF inhibitors. Triple-negative breast cancers are considered the most immunogenic cancers, therefore immunotherapy is firstly aimed at their treatment by using PD-1 inhibitor and PD-L1 inhibitor⁸.

Five-year survival is the highest in the most developed countries. At the top of the list are the United States of America (USA) with 90,2% and Australia with 89,5%, while the lowest survival is in India 66,1%⁹.

Case report

This paper shows 46-year-old female patient. She first paid a visit to her physician in 2007 when she was 30 years old and was planning her second pregnancy. During a routine breast self-examination, she felt a lump. GP diagnosed a left para areolar lump with no palpable lymph nodes under the arm. There was no history of breast cancer in her family. She was referred to an ultrasonographic exam which confirmed the presence of a tumor. After the diagnosis and preoperative preparation she underwent surgery - *Quadrantectomy mammae lateris sinistri cum evacuationem axillae*. Since lymph nodes were positive 2/4, dissection of the axillae was performed. The tumor diameter was 18x13 mm. Pathohistological findings stated *Carcinoma mixtus praecipue ductale G2 et partim mucinosum G2*. The definitive findings of lymph nodes of the underarm didn't confirm metastases. The tumor's hormonal status was estrogen 1, progesterone 1, and HER2 2.

She further underwent six rounds of FAC chemotherapy (fluorouracil, doxorubicin, and cyclophosphamide), and 16 rounds of trastuzumab therapy. Tamoxifen was introduced and she used it until December 2009 when some changes in

na desnom i levom jajniku, urađena je *Adnexectomy lateris dextri et cystectomy cystis ovarii lateris sinistri*.

Pacijentkinja je redovno kontrolisana i subjektivno se dobro osećala. Odlučila se za drugu trudnoću pet godina nakon operacije. Iz spontane, uredne trudnoće u junu 2013. godine je rodila devojčicu, Apgar skora 9/10. Dojila je deset meseci iz neoperisane dojke bez potrebe za upotrebom adaptiranih mlečnih formula. Nalaz kontrolne mamografije 2022. godine glasilo je BIRADS 2. Emotivno i fizički navodi da se odlično oseća.

Diskusija

U SAD karcinom dojke predstavlja najučestaliji karcinom kod žena u reproduktivnom dobu¹⁰. Od 230 000 novodijagnostikovanih slučajeva karcinoma dojke u SAD oko 11% je mlađe od 45 godina¹¹. Ukoliko žena do momenta postavljanja dijagnoze nije rađala, poželjno je da se terapija sprovede na način koji će očuvati njenu plodnost i omogućiti joj da nakon terapije rađa decu. Ženama se uobičajeno savetuje da odlože trudnoću 2–3 godine nakon operacije karcinoma dojke zbog rizika od relapsa. Meta-analiza četiri velike studije pokazala je da ne postoje razlike u ishodima lečenja između grupe žena koje su zatrudnele u periodu 6–24 meseca nakon postavljanja dijagnoze i grupe koja je čekala dvije ili više godina da zatrudni¹². Poznato je da standardna terapija za karcinom dojke može dovesti do ovarijalne insuficijencije, kasne trudnoće i nemogućnosti dojenja¹⁰.

Ovarijalna insuficijencija može biti uzrokovana gonadotoksičnim efektima hemioterapeutika, koji se standardno primenjuju u terapiji karcinoma dojke. Kombinovane hemioterapije koje u sebi sadrže ciklofosfamid su se pokazale naročito toksičnim, pa tako kombinacija ciklofosfamid-metotreksat-5-fluorouracil (CMF) može dovesti do ovarijalne insuficijencije u 21–71% slučajeva kod žena mlađih od 40 godina, dok kombinacije ciklofosfamid-epirubicin-5-fluorouracil (CEF) i ciklofosfamid-doksorubicin-5-fluorouracil (FAC) dovode do ovarijalne insuficijencije u 40% slučajeva¹³. Generalno važi preporuka da žene treba da odlože trudnoću na minimum šest meseci od završetka hemioterapije.

Ukoliko je u pitanju rani hormon zavisni karcinom dojke (HR+), hormonska terapija se primenjuje u periodu 5–10 godina¹⁴. Zbog ovog odlaganja se može doći u situaciju da trudnoća bude kasna. Studija POSITIVE¹⁵ pratila je u periodu od decembra 2014. godine do decembra 2019. godine 516 žena (rani HR+ karcinom dojke, starosti do 42 godine), kojima je uvedena adjuvantna hormonska terapija u trajanju 18–30 meseci nakon hirurške intervencije sa ciljem da se utvrdi da li je moguće prekinuti terapiju na period od dve godine zbog trudnoće i ponovo je nastaviti nakon porođaja i dojenja. Tokom trajanja studije rođeno je 365 beba pri čemu prekid terapije zbog trudnoće nije povećao kratkoročni rizik od relapsa¹⁵. Kod primene tamoksifena u terapiji važe preporuke

the ovaries were found. Due to numerous cysts on both ovaries, *Adnexectomy lateris dextri et cystectomy cystis ovarii lateris sinistri* was performed.

The patient underwent regular check-ups and personally, she felt good. She decided on the second pregnancy five years after the surgery. It was a spontaneous pregnancy and she gave birth to a baby girl in June 2013, with an Apgar score of 9/10. She breastfed her for ten months from the non-operated breast and there was no need for baby formula. Control mammography in 2022 showed BIRADS 2 findings. Emotionally and physically she felt great and she said motherhood was her soul food.

Discussion

In the USA, breast cancer is the most common cancer in women during the reproductive period¹⁰. Out of 230,000 newly diagnosed breast cancer cases in the USA, 11% of women are younger than 45¹¹. If a woman didn't give birth before the diagnosis of breast cancer it was desirable to recommend the therapy which will preserve her fertility and enable her to give birth again after the therapy. Women are usually advised to postpone pregnancy after breast cancer surgery for 2–3 years due to the risk of relapse. Meta-analysis of the four large studies showed there were no differences in the treatment outcomes between women who got pregnant 6–24 months after the diagnosis and women who waited 2–3 years to get pregnant¹². It is well established that standard breast cancer therapy may lead to insufficiency of the ovaries, late pregnancy, and inability to breastfeed¹⁰.

Ovarian insufficiency is caused by the gonadotoxic effects of chemotherapeutics which are standardly applied in breast cancer therapy. Combined chemotherapies, containing cyclophosphamide proved to be especially toxic. A combination of cyclophosphamide-methotrexat-5-fluorouracil (CMF) may lead to ovarian insufficiency in 21–71% of cases of women younger than 40, while the combination of cyclophosphamide-epirubicin-5-fluorouracil (CEF) and cyclophosphamide-doxorubicin-5-fluorouracil (FAC) lead to ovarian insufficiency in 40% of cases¹³. In general, it is recommended to postpone pregnancy for at least six months after chemotherapy.

In the cases of early hormone-sensitive breast cancer (HR+), hormonal therapy is recommended for 5–10 years¹⁴. Due to this postponing, the pregnancy may be late one. The POSITIVE¹⁵ study followed 516 women, from December 2014 to December 2019. They had early HR+ breast cancer and were up to 42 years of age and they had adjuvant hormonal therapy for 18–30 months after surgery. The aim was to establish whether it was possible to cease the therapy for two years, due to planned pregnancy, and then continue with it after giving birth and breastfeeding. During the study, 365 babies were born and therapy cessation due to pregnancy

da se koristi mehanička kontracepcija minimum tri meseca nakon prekida terapije zbog teratogenosti.

Trastuzumab predstavlja standardnu terapiju za HER2+ karcinom dojke. Iako su istraživanja pokazala da terapija trastuzumabom kod mlađih pacijentkinja u ranoj trudnoći ima mali rizik od pojave teških komplikacija¹⁶, ipak se preporučuje odlaganje trudnoće na minimum sedam meseci od prestanka terapije.

Dojenje ima pozitivan efekat na stopu preživljavanja kod obolelih od karcinoma dojke i od esencijalne je važnosti za pravilan rast i razvoj odojčeta¹⁷. Svakako je dojenje nemoguće ukoliko je urađena bilateralna mastektomija. Ukoliko je urađena poštedna mastektomija, dojenje je moguće iz operisane dojke s tim što su količina i kvalitet mleka smanjeni zbog promena u dojci i bradavici¹⁸. Uočena je i pojava hipoplazije i hipotrofije u operisanoj dojci zbog fibroze uzrokovane radioterapijom¹⁹. Dojenje iz kontralateralne dojke se može odvijati potpuno normalno bez ograničenja, ali se veliki broj žena ne oseća dovoljno sigurnim da doji iz samo jedne dojke, ne nailazi na dovoljno podrške porodice i lekara ili čak oseća nelagodu i bol u bradavici tokom dojenja¹⁷.

Zaključak

Od velikog je značaja obratiti posebnu pažnju na želju žene u reproduktivnom dobu da rađa nakon lečenja karcinoma dojke. Pacijentkinja koju smo prikazali u ovom slučaju, pet godina nakon operacije dojke, naknadnog uklanjanja desnog jajnika, cisti sa levog jajnika i prepreka koje idu uz terapiju koju je primila, rodila je devojčicu koju je dojila dest meseci iz neoperisane dojke. Time je potvrđen značaj rane dijagnostike karcinoma dojke koji u kombinaciji sa poštednom mastektomijom može ženi omogućiti potpuno normalno majčinstvo nakon lečenja. Savetovanje u vezi sa trudnoćom i dojenjem mora biti adekvatno kako bi se žene ohrabrine da rađaju nakon lečenja karcinoma dojke, jer ne postoje dokazi koji govore protiv toga¹⁹.

didn't increase the risk of relapse¹⁵. In women taking tamoxifen, it is recommended to use mechanic contraceptives, at least three months after the therapy cessation, due to teratogenicity.

Trastuzumab is the standard therapy for HER2+ breast cancer. Although the research showed trastuzumab therapy in younger patients in early pregnancy had a small risk for severe complications¹⁶, it is still recommended to postpone pregnancy for at least seven months after the therapy cessation.

Breastfeeding has a positive effect on the survival rate in patients suffering from breast cancer and it is essential for healthy growth and development of the newborn¹⁷. Breastfeeding is impossible if bilateral mastectomy is performed. If a salvageable mastectomy is performed, breastfeeding from the operated breast is possible but the quantity and quality of milk is reduced due to changes in the breast and nipple¹⁸. Hypoplasia and hypotrophy of the operated breast were noticed, due to fibrosis caused by radiotherapy¹⁹. Breastfeeding from the contralateral breast may be done normally and without limitations but a large number of women don't feel quite confident about breastfeeding from one breast only, and often there is little support from the family and physicians or they may even feel discomfort or pain in the nipple during breastfeeding¹⁷.

Conclusion

It is very important to pay attention to women's wishes, in the reproductive period, for them to be able to give birth after the breast cancer treatment. The patient we presented succeeded in giving birth to a baby girl, and breastfeeding her despite the breast cancer operation five years ago, removal of the right ovary, cyst removal from the left ovary, and all the obstacles that were part of her therapy protocol. Thus, the importance of early diagnosis of breast cancer was once again confirmed, and combined with salvageable mastectomy it may enable a woman to breastfeed after the treatment. Counseling concerning pregnancy and breastfeeding must be appropriate so women would be encouraged to give birth after the breast cancer treatment because there is no evidence to the contrary¹⁹.

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Primljen - Received - 06.11.2023.

Ispravljen - Corrected - 18.12.2023.

Prihvaćen - Accepted - 22.02.2024.