Jurnal Medical Aradean (Arad Medical Journal)
Vol. XXI, issue 2, 2018, pp. 12-16

INCIDENCE AND MORTALITY OF CERVICAL CANCER IN ARAD COUNTY DURING 1957-2017

Ana-Liana Tataru [1, 2], Loredana Marc[1, 2], Alexandru Marius Furău[1,3], Voicu Dașcău[1, 2], Casiana Boru[1, 2], Roxana Livia Furău[1], Cristian George Furău[1, 2], Afilon Jompan[1]

[1] "Vasile Goldis" Western University of Arad, Arad, Romania
[2]Arad County Clinical Hospital, department of Obstetrics and Gynecology, Romania
[3]Arad County Clinical Hospital, department of Oncology, Romania

ABSTRACT. Regarding cervical cancer mortality Romania is in the first place and in the second one, after Bulgaria, at the incidence of this pathology. Cervical cancer can be prevented through vaccination, Babeș-Papanicolaou smear and HPV DNA typing, to identify precancerous lesions. A retrospective study has been done during 1957-2017 in Arad County, to identify the mortality and morbidity from cervical cancer. The sample included all the registered cases in the Oncology Department and treated in the Obstetrics-Gynecology Department, in the studied period. Statistical data and the graphics and charts have been analyzed and drawn with *Excel, IBM SPSS Statistic 20* and *MedCalc*. During this period, there have been registered 8.769 cases of genital cancer in women, most of them being breast related (n=4005; 45,62%), while the cervical cancer had a percentage of 29,83%, meaning 2616 cases. Squamos cell carcinoma is the histologically most frequently subtype to be seen (73,8%), followed by adenocarcinoma (11,4%). Mortality through cervical cancer depends on the stage of the disease when first diagnosed, if it has been found out in the first stage the 5-year survival rate is 92%, in second and third stage is 56%, and in forth stage is 17%. Death represented 63,79% of cases before 1991 and 58,76% after 1991. Romania needs imperative actions to be taken, mostly concerned on the highest risk age categories and building a positive attitude regarding cancer screening, knowing that a positive attitude is never automatic.
Keywords: cervical cancer, mortality, Arad county

INTRODUCTION

Mortality through cervical cancer is affecting over 560.000 (Globocan, 2018) women per year worldwide, despite all control and prevention measures (Hoffman, 2015). First staging systems for gynecological cancers appeared in the early 20th century (Odicino et al, 2008) when it has been observed that women from developed countries are more affected from cervical-uterine carcinoma.

Romania has the highest incidence and mortality from cervical cancer in Europe (Globocan 2018), because early prevention and detection methods during national health programs are weak.

Arad County is known to have the highest incidence of all cancer types, in comparison with other regions (Romanian Government, 2015), with 413.6 cases in 2016 compared with 298.8 cases in 100.000 inhabitants in Romania.

Cervical cancer is a type of cancer that can benefit from the most simple and easy methods of prevention (Kurman, 2011), provided that the screening tests would be systematically and regularly applied.

TWO screening tests are enough for the prevention of cervical cancer or for early detection: PAP test, which highlights precancerous states and the HPV test for highlighting the infection of the Human Papilloma Virus that may cause these changes. For women between 25-39 years of age, if screening is practiced for these two Tests every 3 years, more than 80% of cervical cancers can be prevented. Data for Romania shows that a screening every 5 years can only prevent 73% of cervical cancers in women under 50 years old.

MATERIAL AND METHOD

The study aims to identify the mortality and morbidity rate from cervical cancer in Arad County.

This study has the following objectives: Identification of the incidence of female genital neoplasia pathologies; knowledge of cervical cancer frequency in the context of genital tumor disease; Identification of the average age of women diagnosed with cervical cancer; knowledge Histopathological types of cervical cancer in Arad County; To identify the mortality rate by cervical cancer.

Target population is represented by Arad County susceptible female population for cervical neoplasia pathology.

Available population is the female population registered in official demographic census, according to

National Statistics Institute" Populația României pe localități la 1 ianuarie 2016. Institutul National de Statistică", ISSN: 2066-2181.

Sampling mode. The sample included all Oncology Department's cases registered between 1957-2017 and treated within the Gynecology Department from Arad.

Including criteria in the sample was the clinical and histopathological diagnosis of cervical cancer between 1957-2017 -2616 cases which were collected non-randomized from statistical data of the two departments.

There has been obtained an Ethical Approval from the Emergency Clinical Hospital of Arad County for statistical processing of data within the two departments – Oncology and Gynecology. Data have been processed according to the rules and the confidentiality of the general personal data was kept.

Statistical data and the graphics and charts have been analyzed and drawn with *Excel*, *IBM SPSS Statistic 20* and *MedCalc*.

RESULTS

During the analyzed period there have been registered 8.769 cases of genital cancer in women, most of them being breast related (n=4005; 45,62%), while the cervical cancer had a percentage of 29,83%, meaning 2616 cases and uterine body cancer (n=1107; 12,64%).

Prevalence in one thousand is the highest for breast cancer 19,81‰ in urban areas versus country areas 11,79‰, followed by cervical cancer 11,34‰ in urban areas and 9,88‰ in country areas, all of this to be reversed when it comes to uterine body cancer 19‰ cases in country areas versus 4,80‰ in urban areas.

Medium	R/Country	U	Total	‰ R	‰ U
Cervix	1020	1596	2616	9,88	11,34
Uterine body	432	675	1107	4,19	4,80
Female genitals	7	8	15	0,07	0,06
Ovary	309	565	874	2,99	4,02
Placenta	3	3	6	0,03	0,02
Breast	1217	2788	4005	11,79	19,81
Vagina	14	9	23	0,14	0,06
Vulva	48	75	123	0,47	0,53
Total	**3050**	**5719**	**8769**	**29,55**	**40,64**

Table1. Prevalence in one thousand in genital cancers according to environmental state

Living environment report, urban versus country area is 1,87:1, to the good of women living in the cities. In general, the genital cancer's incidence reaches the highest number between 50-59 years old (74,67‰), 60-69 years old (69,92‰) and 70-79 (67,27‰) but no age category is being excluded. The average age in which cervical cancer is being diagnosed is 52,42, standard deviation 13,01.

2,616 cases of cervical cancer in the female population in Arad County were recorded in the analyzed range. Their Frequency was characterized by low endemic and then increased endemic distribution, as follows: in the first decade, 1957-1967, 63 cases were recorded (2.41% of the total); in the second decade, 1968-1977, 197 cases were recorded (7.53% of the total), which represents the triation of the number of cases in the previous decade; in the third decade, 1978-1987, 292 cases were recorded (11.16% of the total); In the fourth decade, 1988-1997, 344 cases were recorded, i.e. 13.15% of the total; In the fifth decade, 1998-2007, 687 cases were recorded, i.e. 26.26% of the total; In the sixth decade, 2008-2017, 1033 cases were recorded, i.e. 39.49% of the total. (Figure 1).

The average Age at which cervical cancer is diagnosed is 52.42, the standard deviation 13.01. Overall incidence rates through cervical cancer are age-related, with maximum at over 45 years in the world.

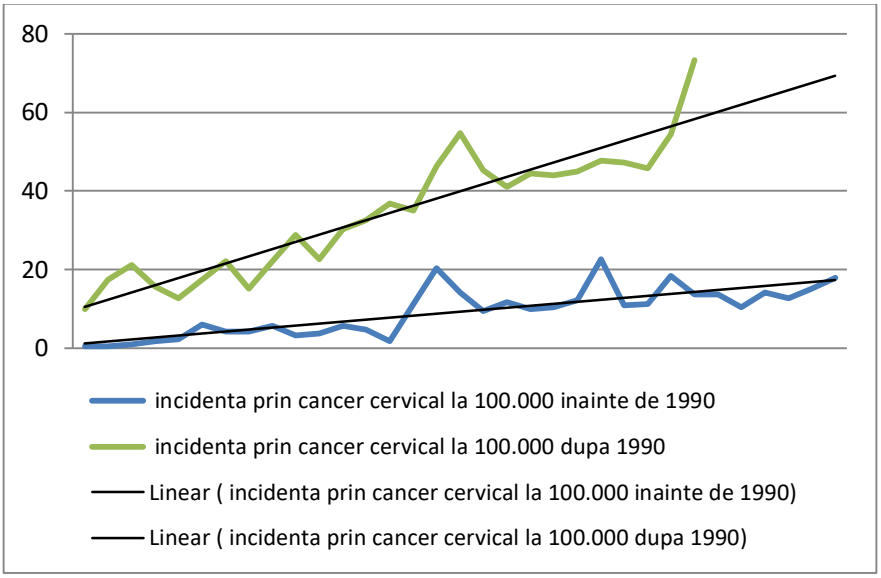

Figure 1 Yearly incidence trough cervical cancer in 100.000 women before and after 1990

The absolute Number of cases is maximum for age decades 40-49, 50-59 and 60-69 years, decades, in all stages of sickness. Of the total, Detection in Stage zero/In situ, represents only 24.20%. Half of the cases are detected in stages 3 and 4, at all age decades. Stage 1 of the disease is only surprised at 1.9% of patients, excluding between ages 20-69 years.

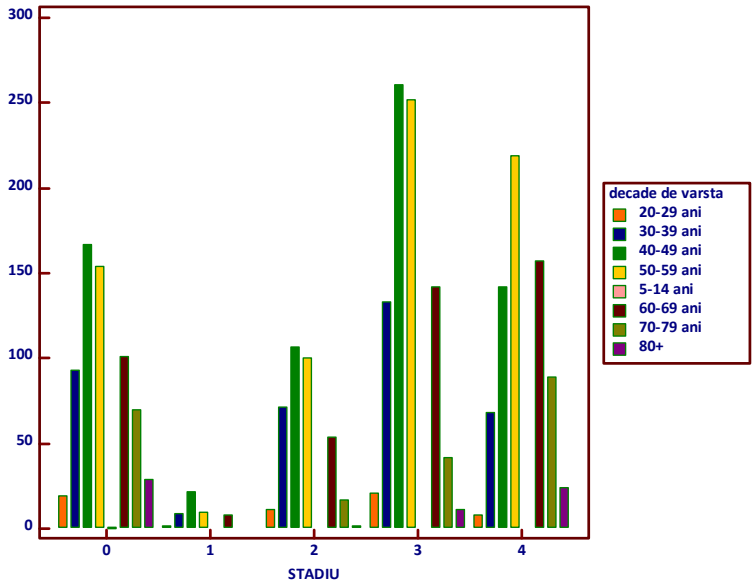

Figure 2 Stage of disease in screening, by age categories

Squamos cell carcinoma is the histologically most frequently subtype to be seen (73,8%), followed by adenocarcinoma (11,4%). The histology of Arad County cervical cancer is interesting at least from the rare subtypes that have been identified point of view, some of them rare as the Ewing sarcoma (Bran, 2018) or rhabdomyosarcoma,

Mortality through cervical cancer depends on the stage of the disease when first diagnosed, if it has been found out in the first stage the 5-year survival rate is 92%, in second and third stage is 56%, and in forth stage is 17%.

Death	Before 1990		Total	After 1991		Total
	NO	YES		NO	YES	
NO	811	235	1046	235	811	1046
YES	1156	414	1570	414	1156	1570
Total	1967	649	2616	649	1967	2616

Table 2 Death cases before and after 1990's

Death represented 63,79% of cases before 1991 and 58,76% after 1991; death- survival ratio being 1,76:1 in the first period and 1,42:1 in the second one. These reports show a relative successful survival rates in cervical cancers patients and it fits in the worldwide numbers.

category	death		Total
	0	1	
5-9years	1	0	1
20-24years	4	3	7
25-29years	26	28	54
30-34years	69	61	130
35-39years	103	141	244
40-44years	139	187	326
45-49years	155	218	373
50-54years	156	268	424
55-59years	103	208	311
60-64years	105	162	267
65-69years	64	131	195
70-74years	50	74	124
75-79years	39	55	94
80-84years	18	19	37
85 and over	14	15	29
total	1046	1570	2616

Table 3 Age death distribution from cervical cancer

Within diagnosed patients: in stage IV survival rate is 16 months (1,4 years) with hazard rate HR 4,7448; confidence rate 95%. In stage III survival rate is 25 months (2,14 years) cu hazard rate HR 1,7139; confidence rate 95%. In stage II, survival rate is 71 months (5,92 years), with hazard rate HR 0,03717, confidence rate 95%. In stage 0-I, survival rate is 72 months (6 years), with hazard rate HR 0,004382, confidence rate 95%. Total survival was 39 months.

DISCUSSIONS

In 2018, within Europe, Romania occupies the second place in cervical cancer incidence with 19,5 $\%_{000}$ (Globocan, 2018) women, the first place being taken by Bulgaria, with an incidence of 20,3$\%_{000}$. Concerning mortality rate from this pathology, Romania occupies first place in Europe with a standardized ratio of mortality of 8,9$\%_{000,}$ under the circumstances in which this ratio is only 3,8$\%_{000}$ inhabitants on this continent (Globocan, 2018).

This study demonstrates that Arad County helps keep Romania on the highest places regarding the incidence and mortality through cervical cancer, with an average age in diagnostics of 52,42, Std.Dev 13,0.

Concerning the studies on cervical neoplasia in Arad County, latest statistical data were published in a book from 2007 by Md, PhD, Furău Gheorghe, *Cancerul de col uterin în Spitalul de Obstetrică-Ginecologie „Dr. Salvator Vuia" Arad (Furău, 2004)* . According to this data, there has been done a 21 years retrospective study between 1980-2000. Genital- breast related neoplasia pathology had a mortality rate of 38,7$\%_{000}$ inhabitants in 1989 and 40,2$\%_{000}$ in 1998, with an inflection of 34,4%000 in 1993. Genital cancer had a mortality rate of 18,2$\%_{000}$ in 1989, then it dropped to 16,9$\%_{000}$ in 1993 and then a raise at 24,0$\%_{000}$ in 1998. During the same period, breast cancers are decreasing from 20,5$\%_{000}$ in 1989 to 16,2$\%_{000}$ in 1998.

High mortality ratio through this cancer is due to the lack of adherence in female population to monitor their genital health, by performing periodical smear Pap (Popescu, 2014). Low education levels of the patients, lack of own initiative in controlling their health status, as well as unjustified fear of a not -existing pain towards the gynecological exam, all of this represent different obstacles in having an early diagnosis and an efficient treatment.

Cervical cancer control in Romania needs imperative measures highlighted (Brenard, 2014) especially on high risk categories and building a positive attitude towards screening methods, knowing that this attitude would not come up automatically and spontaneously.

The right approach, sociologically speaking needs to take away the patient's fear towards the medical gestures, to highlight motivational factors, to explain the role of prevention in healthy population, to highlight the curative stages of the disease, to have a good answer in public health field.

National health program regarding cervical cancer screening foresaw anti HPV vaccination without thinking about a program to test the DNA HPV (Ursu, 2016), even though the DNA HPV prevalence in western Romania is 54,4%.

There is also, sociologically speaking, a fear towards cervical cancer testing, as for the breast cancer, and some others.

Testing for cancers is difficult to accept without preliminary preparations, mostly because cancer tests are dangerous (Purdy, 2001).

Medical screening is very important as a sociological problem, and the absence of accurate sociological approach in cancer screening problems really affects the public health objectives (Armstrong, 2012.

CONCLUSIONS

Romania is known by GLOGOCAN to be on the second place in Europe in cervical cancer prevalence and in the first place regarding mortality. High mortality ratio through this cancer is due to the lack of adherence in female population to monitor their genital health, by performing periodical smear Pap[1]. Low education levels of the patients, lack of own initiative in controlling their health status, as well as unjustified fear of a not -existing pain towards the gynecological exam, all of this represent different obstacles in improving the diagnosis. It is confirmed by the National Statistics Institute that 70 % of Romanians do not monitor their health because of financial reasons. Romania needs imperative actions to be focused mostly on high risk categories and to build positive attitude in discovering cancer, knowing that a positive attitude is never automatic.

BIBLIOGRAPHY

1. BRAN, I. R. TOMA, V. TOMA, A. L. TATARU, E. D. POPOVICI, Cervical Cancer Clustering in Arad and cervical cancer screening programmes in Romania. 5th International Multidisciplinary Scientific Conference on Social Sciences and Arts SGEM 2018, www.sgemvienna.org, SGEM2018 Vienna ART Conference Proceedings, ISBN 978-619-7408-32-4 / ISSN 2367-5659, 19 - 21 March, 2018, Vol. 5, Issue 3.1; 587-594 pp
2. Brenard E. Craina M, Ghidul furnizorilor în cadrul programului de screening an cancerului de col, Editura Mitron, 2014, Timișoara, România, p. 27-103
3. Furău Gheorghe, Cancerul de col uterin în Spitalul de Obstetrică-Ginecologie „Dr. Salvator Vuia" Arad, Editura „Vasile Goldiș" University Press, Arad, România, 2004
4. Globocan 2018 -Cervical cancer incidence Disponibil on-line: https://gco.iarc.fr/today/data/factsheets/populations/900-world-fact-sheets.pdf (accesat în 07.02.2018)
5. Globocan 2018 -Cervical cancer incidence Disponibil on-line: https://gco.iarc.fr/today/data/factsheets/populations/900-world-fact-sheets.pdf (accesat în 07.02.2018)
6. Globocan 2018 -Cervical cancer incidence in Europe, Disponibil on-line: https://gco.iarc.fr/today/data/factsheets/populations/908-europe-fact-sheets.pdf (accesat în 07.02.2018)
7. Globocan 2018 -Cervical cancer incidence in Romania, Disponibil on-line:https://gco.iarc.fr/today/data/factsheets/populations/642-romania-fact-sheets.pdf (accesat în 07.02.2018)
8. Hoffman, B.; Schorge, J.; Schaffer, J.; Halvorson, L.; Bradshaw, K.; Cunningham, F. Williams GINECOLOGIE , ediția a 2-a; editura Hipocrate, București, România, 2015, p 692-979
9. Kurman R.J., Hedrick Elleson L., Ronnett B.M., Blaustein`s Phatology of the Female Genital Tract, 6th ed., Editura Springer Science and Business Media, London, Anglia, 2011, p. 156-188
10. Natalie Armstrong, Helen Eborall, The sociology of medical screening: past, present and future, Sociology of Health & Illness, Volume 34, Issue 2, February 2012 , Pages 161–176.
11. Odicino F, Pecorelli S, Zigliani L, Creasman WT, History of the FIGO cancer staging system, Int J Gynaecol Obstet. 2008 May, pp 205-210;
12. Popescu, I.; Ciuce, C. Obstetrics and Gynecology. Tratat de chirurgie, vol. V Obstetrică-Ginecologie, Coordonator: Peltecu, G., ediția a II-a, Editura Academiei Române, București, România, 2014, p 3-17, 139-227
13. Romanian Government, http://cnsisp.insp.gov.ro, Recorded cancer patients by sem. I 2016 compared with sem. I 2015, pp 1-28.
14. The Sociology and Politics of Health, A Reader, edited by Michael Purdy and David Banks, Routledge Taylor and Francis Group, 2001, pp 151-158;

Ursu RG, Cervical Cancer Control in Romania Requieres Optimization, Cervical Cancer: Recent Research and Review Studies | www.smgebooks.com, Published Date: April 16, 2016, pp1- 6;