Epidemiologic Data of Malignant Melanoma in Osijek-Baranya County (Eastern Croatia) During the Period of 2000–2008

Kraljik, Nikola; Rosso, Marinela; Šepić, Tatjana; Maleš, Josip; Vranješ, Željko; Kondža, Goran

Source / Izvornik: **Collegium antropologicum, 2010, 34, 39 - 43**

Journal article, Published version
Rad u časopisu, Objavljena verzija rada (izdavačev PDF)

Permanent link / Trajna poveznica: https://urn.nsk.hr/urn:nbn:hr:239:473328

Coll. Antropol. **34** (2010) Suppl. 2: 39–43
Original scientific paper

Epidemiologic Data of Malignant Melanoma in Osijek-Baranya County (Eastern Croatia) During the Period of 2000–2008

Nikola Kraljik[1], Marinela Rosso[2], Tatjana Šepić[3], Josip Maleš[2], Željko Vranješ[2] and Goran Kondža[4]

[1] Institute of Public Health for the Osijek-Baranya County, Osijek, Croatia
[2] Department of Otorhinolaryngology and Head and Neck Surgery, University Hospital Osijek, Osijek, Croatia
[3] Department of Otorhinolaryngology and Head and Neck Surgery, University Hospital Rijeka, Rijeka, Croatia
[4] Department of Surgery, University Hospital Osijek, Osijek, Croatia

A B S T R A C T

During the past several decades there has been a substantial increase in the incidence of malignant melanoma worldwide. The highest incidences were reported in New Zealand and Australia. In Europe the northern countries generally have a higher incidence. The aim of this retrospective study was to provide the incidence and mortality for all patients with malignant melanoma diagnosed in Osijek-Baranya County, Eastern Croatia, during 2000–2008. In the past 30 years in the Republic of Croatia the incidence of melanoma increased by 337%. During the period of 2000–2006 in Osijek-Baranja County, the incidence of melanoma increased by 13%. The incidence of melanoma increases with age, but in past decades melanoma is more often diagnosed in people aged 25–40. The mortality between 2000 and 2008 increased by 18%. The incidence of melanoma generally increases equally in men and women. The most common localization of skin melanoma in males was trunk and in females the lower extremities. Presently, in Osijek-Baranya County melanoma is 15th on the list of malignant tumors and represent 2% of all malignant tumors. In New Zealand, Australia and European northern countries mortality is reduced, as result of earlier diagnosis and education of risk groups. Unfortunately, in Osijek-Baranya County, in a comparison with these countries, the mortality is higher although incidence is the same or lower.

***Key words**: melanoma, melanoma incidence, Osijek-Baranya County, Croatia*

Introduction

The Osijek-Baranya County is situated in north-eastern Croatia and takes up a total area of 4,155 km^2, which is 7.3% of Croatia's territory. It is a predominately low lying area where agriculture has been dominate for centuries. It has a continental climate with characteristic hot summers, and the last 9 years has had an average summer temperature about 1.5–2.5 °C higher than average (1961–1990)[1]. According to the 2001 cencus, the Osijek--Baranya County has a population of 330,506 (207,392 in cities and 123,114 in municipalities), 48% are males and 52% are females[2].

Melanoma makes up 5% of all forms of skin cancer, and is responsible for 75% of skin cancer mortalities. The risk of melanoma is 20 times higher for caucasians than for Afroamericans who have a darker skin pigment protection from the sun. Despite protection for people of darker skin, melanoma appears on peoples palms, feet and beneath finger nails[3–4]. Numerous studies point to the facts and causes responsible for the development of melanoma. An important risk factor is excessive exposure to UV rays, also the skin type, personal and hereditary state and melanoma in moles[5–7].

Ultra-Violet Rays (UVR) are split into three spectrums: UVA, UVB and UVC. UVC is totally absorbed in the stratosphere before reaching the earth's surface. UVB rays are shorter and primarily cause tanning and burning. Apart from skin burning, skin cancer and wrinkles, UVR is responsible for cataract, the macular degen-

Received for publication January 10, 2010

eration and immune system failure[8]. Skin ageing and cancer are a later effect of UVR. Unfortunately, the damage is not always apparent and many young people are not aware of the dangers of sunbathing. In the last century the changes in clothing, sport and recreation, professional activities, longevity, artificial tanning for young people (solariums) have allowed for chronical exposure and UVR development. Doctors and scientists are especially concerned about the increase of skin cancer cases for young people and middle aged people who have experienced temporary, although high UVR skin damage up to their twentieth year[9–10]. There is concern about the increased UVR exposure due to the hole in the ozone layer caused from atmospheric pollution[11].

Materials and Methods

The Institute for Public Health in the Osijek-Baranya County is an institution which in recent years has been developing technologies and tools for monitoring malignant illnesses in it's own region and surrounding counties whose population is treated in University Hospital Osijek. Theoretically there are about 800,000 people who gravitate to this institution. The registration of malignant illnesses is conducted through samples of leading international registers, whereby it is insisted that a thorough citological and pathohistiological verification of the illness is performed. Special attention is given to the mortality rate from malignant illnesses so that specific technologies and tools can offer a high quality data base. Information is relayed to the Croatian Cancer Register. In the study, a retrospective analysis of information is gathered about incidents from malignant melanoma in the Osijek-Baranya County from 2000–2006, as are the facts from the Croatian Institute of Statistics for mortalities from malignant melanoma in the Osijek-Baranya County from 2000–2008. Statistic analysis is performed with the aid of SPSS version 9.

Results

In the Osijek-Baranya County from 2000–2006 there were 181 people registered with melanoma, from which 85 (47%) females and 96 (53%) males (Table 1).

The distribution according to age and sex (Figure 1): with females from ages of 0–9 there were no cases, 1 (1.2%) in the ages from 10–19, 2 (2.4%) in the ages from 20–29, 8 (9.4%) in the ages from 30–39, 12 (14.1%) in the ages from 40–49, 11 (12.9%) in the ages from 50–59, 25 (29.4%) in the ages from 60–69, 19 (22.4%) in the ages from 70–79 and 7 (8.2%) in the ages from 80 and above.

TABLE 1
DISTRIBUTION OF MELANOMA PATIENTS REGISTERED IN THE OSIJEK-BARANYA COUNTY (2000–2006)

	N	%
Female	85	47.0
Male	96	53.0

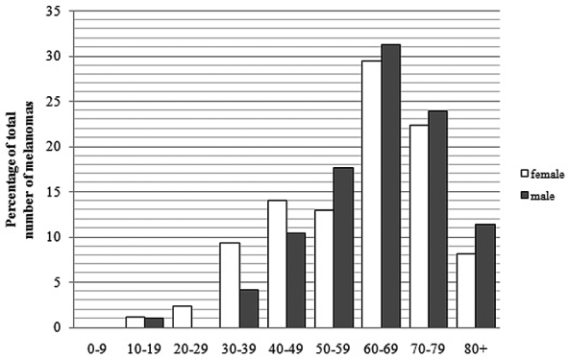

Fig. 1. Distribution of melanoma by age and sex in Osijek-Baranya County, 2000–2006

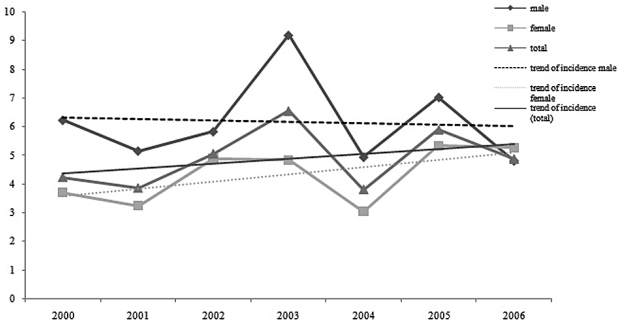

Fig. 2. Melanoma age-standardized (ASR World) per 100,000 incidence rates in Osijek-Baranya County by sex, 2000–2006

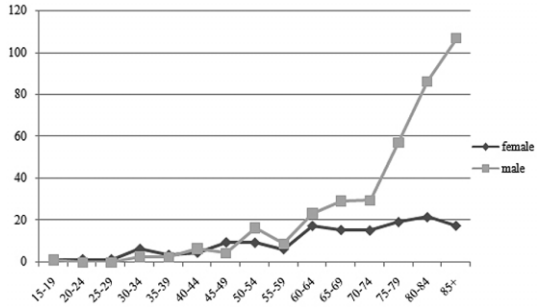

Fig. 3. Average age-specific incidence rates of melanoma in Osijek-Baranya County, 2000–2006

With males from 0–9 there were no cases, 1 (1%) from the ages 10–19, not one case from 20–29, 4 (4.2%) from the ages of 30–39, 10 (10.4%) from the ages of 40–49, 17 (17.7%) from the ages of 50–59, 30 (31.3%) from the ages of 60–69, 23 (24%) from the ages of 70–70 and 11 (11.5%) from the age of 50 and above.

In the considered period melanoma age-standardized (ASR World) incidence rate in the Osijek-Baranya County was 4.9/100,000 (4.3/100,000 for females and 6.2/100,000 for males). Melanoma through a 7 year study period has had a steady growth rate. The numbers are higher for females while for males there is a noticeable drop (Figure 2).

TABLE 2
DISTRIBUTION DEATH OF MELANOMA IN THE OSIJEK-BARANYA COUNTY (2000–2008)

	N	%
Female	42	40.8
Male	61	59.2

Melanoma in the Osijek-Baranya County has considerable differences in the age category (Figure 3). It is an illness of the elderly with people in their seventies more likely to contract it, and especially with males older than 85. The distribution is somewhat more even for females although after the age of 60 takes on an identical pattern.

In the Osijek-Baranya County from 2000–2008, there have been 103 melanoma mortalities, from which 42 (40.8%) females and 61 (59.2%) males (Table 2).

Distribution mortality of melanoma by age and sex for the stated period (Figure 4): For females from the ages of 0–9 there were no mortalities, as in the ages from 10–19 and in the ages from 20–29.4 (9.5%) in the ages from 30–39.10 (23.8%) in the ages from 40–49.5 (11.9%) in the ages from 50–59.11 (26.2%) in the ages from 60–9.9 (21.4%) in the ages from 70–79 and 3 (7.1%) in the ages from 80 and older. For males in the ages from 0–9 there were also no mortalities, 1 (1.6%) in the ages from 10–19, no mortalities in the ages from 20–29.3 (4.9%) in the ages from 30–39.7 (11.5%) in the ages from 40–49.10 (16.4%) in the ages from 50–59.17 (27.9%) in the ages from 60–69.18 (29.5%) in the ages from 70–79 and 5 (8.2%) in the ages of 80 and above.

Through a 9 year study period of melanoma age-standardized (ASR World) mortality rates, the Osijek-Baranya County had 2.1/100,000 (1.7/100,000 for females and 3.0/100,000 for males). Melanoma mortality had a gradual rise especially with males, and rises and falls with females although unchanged in percentages (Figure 5).

The trend in melanoma mortalities shows a significant rise in the senior population and is marked with men from 65–69, 70–74, 75–79 and 80–84. ith females the tendency of growth is most evident after the age of 60 and 85 and above (Figure 6).

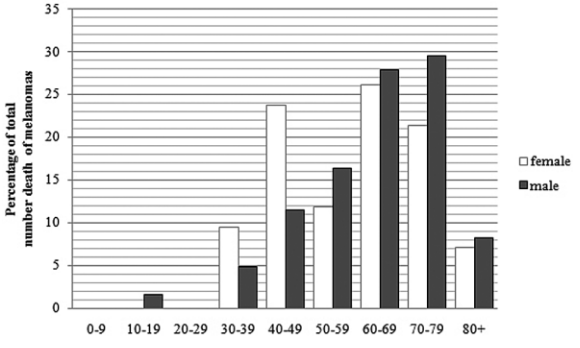

Fig. 4. Distribution mortality of melanoma by age and sex, 2000–2008

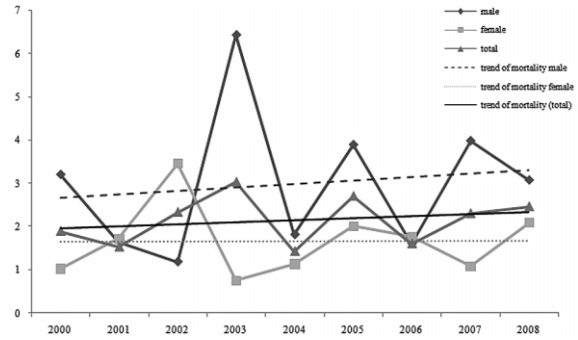

Fig. 5. Melanoma age-standardized (ASR World) 100,000 mortality rates in Osijek-Baranya County by sex, 2000–2008

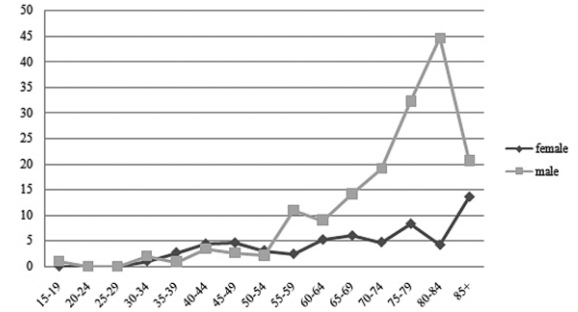

Fig. 6. Average age-specific mortality rates of melanoma in Osijek-Baranya County, 2000–2008

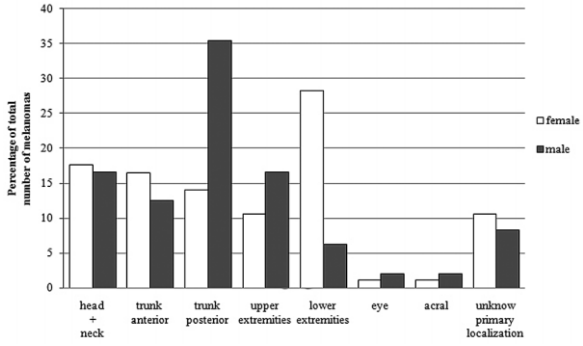

Fig. 7. Localization of melanoma in female and male patients, 2000–2006

According to the localization, the most affected areas are the central body, lower limbs and head and neck areas, followed by the upper limbs and the remaining areas to a lower degree. With males the localization of melanoma is in the back (35.4%), and with females the most common localization is in the lower limbs (28.2%) (Figure 7).

Discussion

The aim of this retrospective study is to show the epidemiologic melanoma figures diagnosed within the Osijek-Baranya County from 2000–2008. In 30 years (from 1977 to 2006) there has been a 337% growth rate

in Croatia. The mortality rate from malignant melanoma throughout the same period has risen 338%. In the Osijek-Baranya County incidents of malignant melanoma in 7 years (2000–2006) have risen 13%, while the mortality rate in the last 9 years has risen by 18%. Melanoma in the Osijek-Baranya County in 2006 was in 15th place and represents 2% of all malignant tumors, and in mortality rates in 2008 was in 17th place and represents 1.5% of all cancer mortalities[12].

In this same period there was a rapid growth of melanoma incidents in Nordic countries, according to statistics of the Norwegian Cancer Register, from 1954–1958, and 2000–2004 there was a growth of melanoma incidents by more than 500%. Also in western European countries, New Zealand, Australia and the USA there is a significant survival rate amongst those with melanoma, which is mainly due to early detection[13–17].

Unfortunately, in the Osijek-Baranya County and the rest of Croatia in relation to these countries, the mortality is higher even though the incidents are equal or lower than in the stated countries. The figures for Croatia are in the period from 1988–1993 and 1994–1998. The expected 5 year survival period for males is 52% and 66% for females[18].

Conclusion

The incidents of melanoma in the Osijek-Baranya County are significant and lead to a disturbing public health issue. While in the western world the consciousness of early detection of melanoma is wide spread and leads to successful treatment and a longer life, at home knowledge of the dangers of melanoma are low, which results in late detection and poorer results in successful treatment and survival. In the hope that melanoma will be successfully treated in all phases, the public health system should move towards removing the risks, primarily in UV rays and early detection. In this respect, everyone from an infant age to the adult population should be educated about the dangers of temporary and widespread UV rays. It is of great importance that all sectors of the community from nurseries, schools, sports and recreational institutions, local authorities and work environments cooperate closely with health workers. In the times ahead the focus is primarily on prevention and early detection of melanoma with the goal of reducing incidents and mortalities in the future[19].

REFERENCES

1. METEOROLOGICAL AND HYDROLOGICAL INSTITUTE OF CROATIA, Anomalies from the 1961–1990 Climate Normals, accessed 05.08.2009. Available from: http://klima.hr/ocjene_arhiva_e.html. — 2. CENTRAL BUREAU OF STATISTICS, REPUBLIC OF CROATIA, Census of population, households and dwellings (2001). — 3. AMERICAN CANCER SOCIETY, Cancer facts and figures (Atlanta, 2003). — 4. RIGEL D, The Skin Cancer Foundation Journal, 19 (2001) 13. — 5. ŠITUM M, BULJAN M, BULIĆ SO, SIMIĆ D, Coll Antropol, 31(2007) 13. — 6. US ENVIRONMENTAL PROTECTION AGENCY, The sun, UV, and you; A guide to sunwise behavior (1999). — 7. ELWOOD JM, JOBSON J, Int J Cancer, 73 (1997) 198. — 8. VOJNIKOVIĆ B, NJIRIĆ S, ČOKLO M, ŠPANJOL J, Coll Antropol, 31 (2007) 43. — 9. GILCHREST B, ELLER M, GELLER A, YAAR M, New Engl J Med, 29 (1999) 1341. — 10. MASNEC IS, VODA K, ŠITUM M, Coll Antropol, 31(2007) 97. — 11. ARMSTRONG BK, Int J Epidemiol, 23 (1994) 873.— 12. CROATIAN NATIONAL INSTITUTE FOR PUBLIC HEALTH, CROATIAN NATIONAL CANCER REGISTRY, Cancer incidence in Croatia (Zagreb, 1983–2008). — 13. PARKIN DM, WHELAN SL, FERLAY J, TEPPO L, THOMAS DB, Cancer incidence in five continents Vol. 8 (International Agency for Research on Cancer, Lyon, 2002). — 14. CURADO MP, EDWARDS B, SHIN HR, STORM H, FERLAY J, HEANUE M, BOYLE P, Cancer Incidence in Five Continents Vol. 9 (IARC Scientific Publications No 160, Lyon, 2007). — 15. COATES MS, ARMSTRONG BK, Cancer in New South Wales, Incidence and mortality 1997 (NSW Cancer Council, Sydney, 2000). — 16. NGUYEN HL, ARMSTRONG B, COATES M, Cutaneous Melanoma in NSW in 1983 to 1995 Cancer Epidemiology Research Unit, NSW Central Cancer Registry (NSW Cancer Council, 1997). — 17. SMITH RA, COKKINIDES V, EYRE HJ, CA-Cancer J Clin, 53 (2003) 27. — 18. STRNAD M, ZNAOR A, Cancer patients survival in Croatia, (Croatian National Cancer Registry, Croatian National Institute for Public Health, Zagreb, 2006). — 19. THE CANCER COUNCIL NEW SOUTH WALES AND NSW HEALTH DEPARTMENT, Skin Cancer Prevention Strategic Plan for NSW 2001–2005 (Sydney, 2001).

N. Kraljik

Institute of Public Health for the Osijek-Baranya County, Franje Krežme 1, 31000 Osijek, Croatia
e-mail: nikola.kraljik@os.t-com.hr

EPIDEMIOLOŠKI PODACI O MALIGNOM MELANOMU U OSJEČKO-BARANJSKOJ ŽUPANIJI (ISTOČNA HRVATSKA) U RAZDOBLJU OD 2000–2008. GODINE

S A Ž E T A K

Posljednjih se desetljeća bilježi značajan porast incidencije malignog melanoma u čitavom svijetu. Najviša incidencija bilježi se u Novom Zelandu i Australiji. U Europi sjeverne zemlje imaju najveću incidenciju. Cilj ove retrospektivne studije bio je prikazati incidenciju i smrtnost kod svih bolesnika kojima je na području Osječko-baranjske županije dijagnosticiran maligni melanom u razdoblju od 2002. do 2008. godine. Posljednjih 30 godina incidencija malignih melanoma u Republici Hrvatskoj porasla je za 337%. U razdoblju od 2000. do 2006. godine u Osječko-baranjskoj županiji incidencija malignog melanoma porasla je za 13%. Incidencija melanoma raste s dobi, no u posljednje vrijeme sve se češće dijagnosticiraju u dobnoj skupini između 25-te i 40-te godine. U razdoblju od 2000. do 2008. godine smrtnost je porasla za 18%. Učestalost pojavljivanja melanoma gotovo je podjednaka u muškaraca i žena. Najčešća lokalizacija kožnog melanoma kod muškaraca je trup, a kod žena donji ekstremiteti. Melanom se u Osječko-baranjskoj županiji po učestalosti nalazi na 15. mjestu i predstavlja oko 2% svih malignih tumora. U Novom Zelandu, Australiji i zapadnoeuropskim zemljama smrtnost je smanjena, i to kao rezultat rane dijagnostike i edukacije rizičnih skupina. Nažalost, u Osječko-baranjskoj županiji, u usporedbi s ovim zemljama, smrtnost je veća iako je incidencija jednaka ili niža.