

## NON-MELANOMA SKIN CANCERS AND PRECANCEROUS SKIN LESIONS IN THE 1996 – 2002 PERIOD

Majda Vučić, Sanda Rožanković, Vesna Vucelić, Mladen Belicza and Mirna Šitum<sup>1</sup>

Ljudevit Jurak University Department of Pathology and

<sup>1</sup>Department of Dermatology, University Hospital Sestre milosrdnice Zagreb, Croatia

**SUMMARY** – Non-melanoma skin cancers and precancerous skin lesions have a significant morbidity although with relatively low mortality rates in geriatric population. These lesions developed especially on every day sun exposed skin regions. The aim of this study was to determine the prevalence, age and sex distribution of non-melanoma skin cancers and precancerous skin lesions among biopsy specimens collected during seven years (1996-2002) in the University Department of Pathology “Ljudevit Jurak”. Also is analysed their relationship with sun exposure on different body regions. During observed period there were 2486 basal cell carcinoma, 419 squamous cell carcinoma and 468 precancerous skin lesions. Basal cell carcinoma was more common in males than in females with ratio 1:0,9 as well as squamous cell carcinoma with male to female ratio 1:0,8. Precancerous skin lesions were more frequent in the female population with male to female ratio 1:1,3. Maximal incidence for booth types of non-melanoma tumours was between 70 and 79 years in both sexes while precancerous skin lesions appeared one-decade earlier. Also is found that analysed skin lesions appear in 60-70% on skin of the head, which is almost permanently sun exposed body region.

**Key words:** *skin, non-melanoma tumours, precancerous skin lesions*

### Introduction

Among all types of malignant skin tumours, which mostly appear on sun exposed parts of the skin, non-melanoma skin tumours are the most common, especially basal cell carcinoma and squamous cell carcinoma.<sup>1,2</sup> In difference from melanoma, non-melanoma skin cancers rarely metastasise and in most cases are curable, so they have significantly smaller mortality in population.<sup>3,4</sup> Sun light is the most important factor in aetiology of non-melanoma skin tumours. Even all non-melanoma skin cancers show connection with sun exposed skin regions, distribution of basal cell carcinoma and squamous cell carcinoma in some

reported data is not completely equal.<sup>5</sup> Precancerous skin lesions often progress into squamous cell carcinoma, with a latency of 10-20 years.<sup>6</sup> The levels of UV irradiation rise significantly through depletion of ozone layer so non-melanoma skin cancers are important health problem.<sup>7</sup>

### Patients and methods

Computed Registry at the “Ljudevit Jurak” University Department of Pathology was analysed to identify all patients with non-melanoma skin cancers and precancerous skin lesions (actinic keratosis and Morbus Bowen) in the 1996 – 2002 period. Relevant data included age and sex of the patients, localisation /site/ of the lesions, histological type of cancer or precancerous skin lesion and differentiation of squamous cell carcinoma according to Broder’s classification. During observed period there were 2486

Correspondence to: *Majda Vučić M.D.*, Ljudevit Jurak University Department of Pathology, Sestre milosrdnice University Hospital, Vinogradska 29, 10000 Zagreb, Croatia

E-mail: majda.vucic@hi.hinet.hr

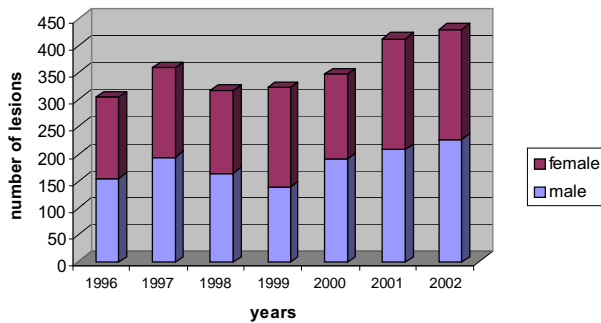


Figure 1. Distribution of basal cell carcinoma according to sex in the 1996-2002 period

basal cell carcinoma, 419 squamous cell carcinoma and 468 precancerous skin lesions. Localisation of lesions was divided due to body regions into four major subgroups: head, neck, trunk and extremities. Tumours of skin adnexa were not analysed.

## Results

The basal cell carcinoma was the most common non-melanoma skin cancer in male and female population. Basal cell carcinoma was slightly more common in males with a male to female ratio 1:0,9 (Figure 1). The greatest number of patients with basal cell carcinoma was in age between 70-79 year. In males and females 65% of all basal cell carcinoma appears after age of 60 years. Maximal incidence for non-melanoma tumours and precancerous lesions of the skin were between 70 and 79 years for males and females. Precancerous skin lesions mostly appeared in age between 60 and 79 years in males and females (Figure 2). All analysed skin lesions appear in 60 to 75% on skin of the

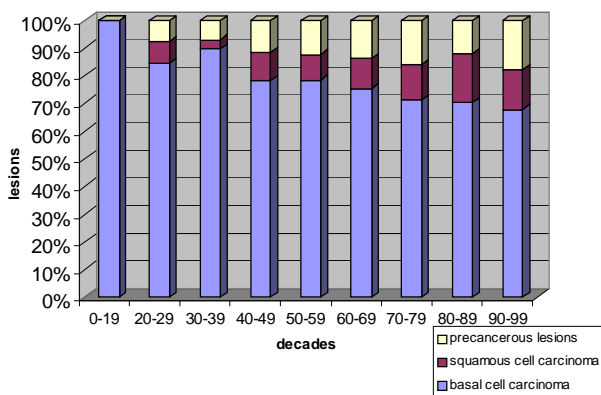


Figure 2. Age distribution in decades of analysed skin lesions in the 1996-2002 period

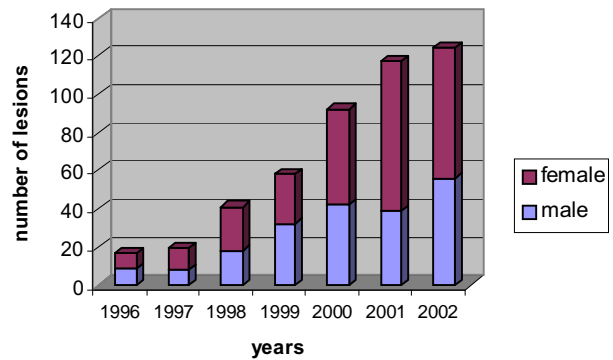


Figure 3. Distribution of precancerous skin lesions according to sex in the 1996-2002 period

head which is almost permanently sun exposed region. Females have more precancerous skin lesions with male to female ratio 1:1,3 (Figure 3) but males have more squamous cell carcinoma with male to female ratio 1:0,8 (Figure 4). The histological type of basal cell carcinoma was solid type in 45% of all basal cell carcinomas followed by multicentric, superficial type. Other histological types of the basal cell carcinoma appeared in very low percent. Squamous cell carcinomas were in 64% diagnosed in well differentiated grade. Incidence of less differentiated tumours rises with higher age of the patients and does not appear before age of 60 years. Actinic keratosis presents 96% of all precancerous skin lesions. Hypertrophic type variant of actinic keratosis were predominant (44%) in both sexes followed with acanthotic type (36%). Maximal incidence of basal cell carcinoma (17% of all basal cell carcinomas) and precancerous skin lesions (26% of all precancerous skin lesions) were in the year 2002. Squamous cell carcinoma showed maximal incidence in the year 2001 (18% of all squamous cell carcinomas).

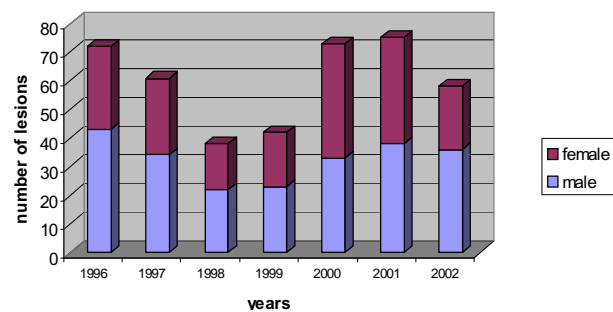


Figure 4. Distribution of squamous cell carcinoma according to sex in the 1996-2002 period

## Discussion and conclusion

Major factor associated with incidence of non-melanoma skin cancers and precancerous skin lesions is exposure to sunlight. Woodhead *et al.* in 1996. reported the significant increase for non melanoma skin cancers in Americans in Hawaii exposed to high intensity UV irradiation.<sup>8</sup> Incidence of cutaneous non melanoma cancer in Denmark 1978–1982 showed exponential increase with age for both sexes.<sup>9</sup> Incidence increased substantially with age, more markedly for squamous cell carcinoma than basal cell carcinoma. Green *et al.* analysed ten years period in Australia and found that basal cell carcinoma was more frequent, but on highly exposed sites of the body the incidence of squamous cell carcinoma was even higher.<sup>10</sup>

In our material both basal cell and squamous cell carcinoma was more common in male than in female population. Age related behaviour (indirect indicator of duration of exposure to UV light) is consistent with the anatomical distribution of non-melanoma skin cancer. Peak incidence for non-melanoma skin cancer was between 70 and 79 years, while precancerous skin lesions mostly appeared in the age 60-79 years in both sexes. Males have the greatest number of non-melanoma skin cancer on the skin of the head, than on upper arm, while females have more squamous cell carcinoma on head skin and in lower extremities.

Also is evident greater frequency of non-melanoma skin cancer on the trunk in covered areas but only in male population. Precancerous skin lesions were found in 66,9% on skin of the head. Our trends and rates fit into a pattern observed in other parts of the Europe and world.

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## Sažetak

### NE-MELANOMSKI TUMORI I PREDTUMORSKE PROMJENE U PERIODU OD 1996. – 2002. GODINE

Nemelanomski tumori kože i predtumorске kožne promjene imaju značajan pobol iako uz nisk u smrtnost u pacijenata treće životne dobi. Ove promjene se posebno razvijaju na djelovima kože koji su svakodnevno izloženi suncu. Cilj ovog rada je prikazati učestalost, razdiobu po spolu i dobi nemelanomskih kožnih tumora i predtumorских kožnih promjena u bioptičkom materijalu sedmogodišnjg razdoblja (1996-2002) na Zavodu za Patologiju "Ljudevit Jurak". Također je proučavan odnos kožnih promjena i izloženosti različitih dijelova tijela suncu. U proučavanom periodu bilo je 2486 karcinoma bazalnih stanica, 419 karcinoma pločastih stanica i 468 predtumorских kožnih promjena. Karcinom bazalnih stanica češće je bio prisutan u muškaraca nego u žena s omjerom 1:0,9 kao i karcinom pločastih stanica s omjerom 1:0,8. Predtumorске kožne lezije bile su češće prisutne kod žena, omjer muškaraca prema ženama bio je 1:1,3. Najveća učestalost za oba nemelanomska kožna tumora bila je između 70 i 79 godina starosti u oba spola dok se predtumorске promjene nalaze desetljeće ranije. Proučavane kožne promjene u 60-70% nađene su na koži glave koja je skoro stalno suncu izloženo područje tijela.

*Ključne riječi: koža, nemelanomski tumori kože, predtumorске kožne promjene*