

# POSSIBILITIES AND LIMITS OF THE POPULATION SCREENING USING QUESTIONNAIRES IN EARLY DETECTION OF SKIN CANCERS

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## ABSTRACT

The incidence of skin cancers, especially of malignant melanoma is increasing worldwide. Prerequisite for successful treatment is an early detection, and population screening using questionnaires is a possible contribution to the solution of this problem.

In Voivodina too, a tendency towards an increasing number of skin cancers was observed. The multiphase oncologic screening of the population started in 1982. The screening included answers to questions which were put forward in a questionnaire and a screening for occult bleeding in the stool. In the communities of Lovćenac and Feketić out of 6102 persons over 40 years of age included in the voters' registration lists, 5555 responded to the screening. In this population altogether 31 persons with skin cancers were detected, which indicates that the yearly age specific incidence for persons over 40 years in the above mentioned communities amounted to 186.0/100 000. In the same period the compared to the same age specific incidence for the whole Voivodina was 62.09, 19.4 % of these patients were detected due to the answers in the questionnaire.

## KEY WORDS

*skin cancers, early detection, population screening, questionnaires, Voivodina*

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## INTRODUCTION

Malignant neoplasms of the skin (cancers) have several epidemiologic characteristics; they can be divided into malignant melanoma (MM, code 172) and other malignant neoplasms of the skin (cancers, code 173 according to the 9th revision of the International Classification of Diseases). From the therapeutic point of view MM unfortunately still presents an extremely serious problem, while other malignant neoplasms of the skin, if detected early, can be in the majority of cases successfully treated.

The skin is especially suitable for development of certain malignant neoplasms. However, available data in the last decade indicate a rather low mortality rate. All over the world including the two million population of Voivodina, there are great differences between the annual incidence (all new cases per 100 000) and the mortality rate (number of death/100 000) considering the code 173; 24.2:0.84. In MM such diversities are only slightly expressed 4.66:1.86. The mortality rate in Voivodina discloses that concerning MM males are twice more endangered as females 2.62:1.25. On



the other hand the difference concerning the sexes is for other malignant neoplasms of the skin only slightly expressed 0.82:0.85 (1).

In the decade 1979-1988 the mortality rate in Voivodina has shown a growing tendency ( $y = 1.973 + 0.143 x$ ;  $r = 0.857$ ) which was more intensive in MM ( $y = 1.298 + 0.110 x$ ;  $r = 0.735$ ) than with other malignant neoplasms of the skin ( $y = 0.673 + 0.03 x$ ;  $r = 0.354$ ).

Incidence of malignant melanoma of the skin has shown a growing tendency even in other regions of former Yugoslavia e.g. in Slovenia (2). The aspects of skin cancer screening were evaluated by Jubelirer et al (3). The enhanced number of diagnosed premalignant and malignant skin conditions during a screening campaign using a trailer in Netherlands attracted much attention (4). Such an observation is considered valuable since the patients mostly do not follow recommendations for an at home screening (5).

The growing mortality rate of skin cancers in Voivodina reveals that prevention activities including an early detection and treatment are not adequate. On the other hand, malignant lesions of the skin may be noticed by the patients at the very beginning, if properly instructed. Since the success of even the most up-to-date treatment is closely linked to the stage of the disease a multiphase oncologic population screening, which included skin cancers was carried out in certain communities of Voivodina.

## MATERIALS AND METHODS

In two communities of Voivodina preventive activities concerning malignant neoplasms of the skin were carried out within the project of multiphase oncological screening. The screening programme was designed as a model to be first tested in the community of Ada in 1982. It was operational in the communities of Ada, Bečej, Mali Idjoš and Senta until 1990. The programme consisted of detecting occult bleeding in the stool by Hemocult method and of a simultaneous screening for other cancers by a questionnaire which included questions on symptoms, which could arouse suspicion of a malignant or premalignant process. All inhabitants over 40 years who were registered in the voters' lists were included. All screenees were visited by members of the staff who paid a special attention to the so called "passive carcinophobia" (conscious evasion to see the general practitioner after signs arousing suspicion were noticed). Rescreening of the same population was carried out every second or third year (6,7,8,9,10,11,12,13,14,15).

The questionnaires contained the following questions concerning skin cancers:

Have you noticed any skin sores or blisters which did not heal for a longer period: on your lips?, on your tongue?

somewhere in the mouth? on your cheeks? on genitals? anywhere else?

Have you noticed on your body some protuberance, bump or swelling connected with the salivary glands? with the thyroid gland? with lymph glands? anywhere else?

Have you noticed a progression or any unusual sign on a wart or birthmark? was it fast growing? any changes in color? a moistness?

Individuals with a positive answer to any of these questions were invited to a medical check up, while those with verified skin lesions were referred to dermatologist regardless of how they were detected, by screening, accidentally or otherwise. Questions on skin lesions were not used before 1987. For this reason the data under discussion refer only to the villages of Lovćenac and Feketić.

In 1990 and 1991 an analysis of the accumulated data took place. A three-year period was determined as a period of investigation for a chosen prevalence, 1987 being the first screening year. The aim of such studies was to perceive further improvements of the multiphase screening program designed for the population of Voivodina.

## RESULTS

In the decade 1979-1988 the average mortality rate of skin cancer in Voivodina reached the figure of 2.75 per 100 000 inhabitants while in the community of Mali Idjoš it amounted to 3.33. From the epidemiologic point of view there is no justified reason to suppose an increasing incidence or mortality rate in the community under observation. The number of dead persons in a population of 15.000 in a decade is too small for an accurate evaluation.

5.555 out of 6.102 inhabitants selected on the basis of the voters' registration lists (91 %) cooperated in the screening. Women responded in a higher percentage than males 91.2:90.9. Of those who did not cooperate 3.8 % died, 0.4 % moved away, in 0.3 % the address was not exact, 0.75 % were omitted due to a severe disease and only 0.07 % refused cooperation. Thus the percentage of those covered by the screening was above 91 %.

During the three-year period under investigation (1987-1989) 31 inhabitants with malignant neoplasms of the skin were registered. The average annual incidence of the skin cancer in the 5.555 screenees over 40 years of age was 186.0, which is three times higher than the analog figure of 62.09 for the whole Voivodina. The increased number of skin cancers was related to the successful screening process. During this three-year period 6 cases (19.4 %) of skin cancers were detected due to the positive answers in the questionnaires. Out of these 6 patients with positive answers 2 did not at first attend the postscreening follow up, but later after having palpated their lesions, decided to consult the dermatologist.



## DISCUSSION

Only 4 persons refused to cooperate at the first contact. In other communities a certain number of individuals with positive answers refused because of further mostly unpleasant diagnostic procedures. E.g. in Hemocult positives additional procedures were necessary and in those suspected to have breast cancer a passive carcinophobia was the reason for an inappropriate reaction. Out of 31 persons affected with skin cancer (12 already had skin lesions at the moment of the screening) only one expressed a negative attitude towards the screening programme, 2 individuals gave no adequate answers because they did not take seriously the changes noted on their skin. Progression of the lesions obliged them to seek medical care immediately after obtaining the results of the screening. On the other hand, 2 cases were uncovered although they were not included into the screening programme: they have noticed the questionnaire by chance in the neighbourhood, palpated their lesions and asked for medical advice.

Three previously known cases with skin cancer were included in the prevalence of the first year screening.

## CONCLUSION

Population screening by questionnaires as a form of organized antiepidemic activity proved to be suitable for an early detection of cancers of the skin. The number of detected cases throughout the screening period was essentially superior to the average incidence and suggested a definitive possibility for lowering the mortality rate of skin cancer which in Voivodina has recently shown a tendency to increase. In contrast to malignant neoplasms of the breast where passive carcinophobia appeared as a limiting factor, a number of inhabitants cooperating in the screening process for skin cancer underestimated skin lesions: 22.2 % of cases detected during the screening period. Such data are potentially useful for further improvement of the actual screening programme.

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