

Conclusion:

- Testing of three BRCA1 gene mutations in all breast-cancer patients of reproductive age in Latvia could provide an opportunity to identify more than 100 high-risk families a year.
- Incidence of breast and ovarian cancer at an early age is an indicative of a possible link to a hereditary mutation.
- Founder effect detected in Latvia will make genetic testing mere cost-effective.

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POSTER

Rare tumour survival in adult European patients

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Background: Most rare tumours present major clinical problems. Their rarity renders in depth study of natural history and identification of optimum treatment guidelines problematic, and early and accurate diagnosis sometimes difficult. Publications on these tumours typically derive from centres of excellence, which do not reflect the situation at the population level. The EUROCARE database presents a unique opportunity to investigate rare cancers in Europe at the population level. The aim of this communication is to describe survival of adult European patients with some rare tumours according to major demographic and clinical variables. Survival time trends and, depending of the number of cases, survival variations in different regions and countries will also be presented.

Material and methods: The European survival figures for the period of diagnosis 1983-94 were derived from the EUROCARE database. The data were contributed by about 65 registries in 21 countries. The rare tumour chosen was on the basis the criteria reported above: very low incidence, treatment problems, follow-up difficulties, geographic variation, lack of literature. The rare cancer sites selected were: angiosarcoma of liver, mesothelioma, adenocarcinoma of cervix, sarcoma of uterus, anal squamous carcinoma, testis cancer in old men, soft tissue sarcoma of limb.

Results: Five-year relative survival for these rare cancers diagnosed between 1983-94 will be analysed and will be described by sex, age, period of diagnosis and large regions. When available stage and therapy will be introduced in the analysis.

Conclusions: The EUROCARE project provides a unique opportunity to study uncommon cancer survival at the population level. Topography with morphological codes will be considered in order to identify rare diagnostic categories of interest. For most rare cancers in the EUROCARE database, the proportion of microscopically confirmed cases is high, indicating good quality data and also the existence of detailed information on morphology.

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POSTER

A definition of what a rare tumor is.

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Background. Medical decisions, clinical research, and healthcare organization pose unique difficulties in rare tumors. In fact, clinical decisions are to be based on weaker evidence; clinical trials are less easy to perform and the development of new drugs (orphan drugs) should receive incentives; patient referral could follow different criteria from frequent tumors. However, a specific definition of rare tumors is lacking. On the other hand, definitions of rare diseases do exist, and they are based on prevalence. In Europe, rare diseases are defined as those with a prevalence <50/100,000.

Material and methods. The EUROCARE database was used in order to provide estimates of the incidence of rare tumors in Europe. The ITAPREVAL database was used in order to provide estimates of the prevalence of rare tumors in a European country such as Italy. Results were compared and evaluated by a group of clinicians and epidemiologists.

Results. If the European definition of rare diseases were used also for tumors, by using the sole ICDO codes for tumor topography, a proportion in excess of 10% of tumor sites would be placed among rare diseases. They would include also esophageal cancer, brain tumors, pancreatic tumors, and leukemias, which have an incidence >3/100,000/year. On the other

hand, tumors such as testicular cancer and thyroid gland tumors, with an incidence <3/100,000/year, would not be considered rare, their prevalence being not so lower than that of one of the most frequent tumors, lung cancer.

Conclusions. Prevalence is a good criterion to define mainly chronic, slowly or non-evolving, rare diseases. In cancer, however, clinical, research, and organizational problems are often stage-specific and related to some windows in the natural history of the disease. Patients with some cancers may be often cured soon after diagnosis, while those with other cancers may not be, and require continuous care. Therefore, the diverse prognosis of different tumors gives rise to inconsistencies if prevalence is used to split them into rare and frequent. In conclusion, a list of rare tumors is under development, based on ICDO codes for topography, morphology, and a combination of both, by using incidence, not prevalence, as a criterion. An incidence threshold around 3/100,000/year might well define a group of tumors likely to be felt as rare by clinicians. A consensus development process about that should then be promoted within the oncology community.

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POSTER

Cohort analysis of prostate cancer mortality in the male population of Belgrade

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Background: The objective of this analysis was to estimate prostate cancer mortality rates and their trends in the male population of Belgrade, during the period 1975-2001, with special emphasis on the assessment of age-period-cohort effects.

Method: The source of mortality data were official death certificates for Belgrade population for mentioned period of time. For calculation of mortality rates, the population denominator data were obtained from the 1981 and 1991 national census data with interpolation. The total population of Belgrade was about 1.6 million during the period observed (1975-2001). Age standardization was done by the direct method using world population as a standard. Regression coefficient was determined by Fisher's test.

Results: In Belgrade, prostate cancer is the 4th most common cause of cancer death in males, representing 6.52% of male cancer deaths. Average annual standardized mortality rate was 10.13 per 100,000 male population (95%CI-confidence interval 9.00-11.26). Mortality rate showed significantly increasing tendency for observed period- $y=6.603+0.259x$, $p=0.001$. In the age group up to 50 average age-specific mortality rate was 0.16/100,000 (95%CI 0.01-0.89). The highest age-specific mortality rate was registered in the age group over 75 years with average value of 229.49/100,000 (95%CI 199.30-259.68). Significantly increasing trends for age-specific mortality rates were registered in all age groups above 60, however the highest increase was in the age group 70-75 ($y=173.269+4.136x$, $p=0.001$). In cohort analysis of age-specific death rates, all age groups of the youngest birth cohorts (1925-1929) have 3-4 times higher prostate cancer mortality risk than birth cohorts of the oldest generations (1900-1904).

Conclusion: According to obtained findings, increasing tendency for prostate cancer mortality in Belgrade, especially in younger generations, should be expected to continue in the future.

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POSTER

Estimate of the pulmonary neoplastic hazard of inhaled depleted uranium in gulf war veterans

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The aim of this study was to evaluate the concentration of inhaled aerosols of depleted uranium oxide in the lungs of Allied Forces Gulf War Veterans during operation Desert Storm. Five British, Canadian, and US veterans were analyzed for the quantitative relationship of four uranium isotopes in the urine, by thermal ionization mass spectrometry. The biological half-life of DU was derived from the Batelle interstitial lung fluid model and the pulmonary DU burden was calculated for time-zero. The total number of alpha radiation events was determined by integrating the value of a 24-hour urinary excretion of depleted uranium from time-zero to the actual measurement time, ten years after exposure. Average 24-hour urinary specimens of five subjects contain $3.27 \times 10^{-2} \mu\text{g}$ of DU corresponding a time-zero inhalation of 0.336 mg of DU with a resulting dose of 0.958 mSv in the first year and 4.86 mSv within ten years. Our values of the upper limit of maximum permissible inhalation dose of total uranium provide a model for the assessment of neoplastic risk of inhaled depleted uranium and warrants further research with a particular reference to pulmonary neoplastic risk of inhaled aerosols of ceramic oxides of depleted uranium.