

## **NCU – Summative report for 2013**

**Report submission date:** 27.02.14

**Principal investigator:** prof. Teuvo Tammela, M.D., Ph.D.

**Project title:** Prostate Cancer Screening in Finland and Sweden – Why is the Efficacy So Different?

**NCU grant received (€):** 50 000

**Project commencement and completion dates:** 01.01.13 – 31.12.13

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**1. Briefly describe the project in a language understandable to non-scientists (max. 100 words)**

The European Randomized Study of Screening for Prostate Cancer Screening (ERSPC) showed differences in the effectiveness of the screening between Finland and Sweden in favour of the latter one. By combining and comparing results from the Finnish and Swedish screening studies, we sought answers to how the natural history of prostate cancer (PC), differences in screening algorithms as well as in other factors influence the outcome of these studies in terms of mortality reduction as well as how to optimize diagnostic tools to identify clinically significant PC.

**2. Summarize the major findings of the project (max. 400 words)**

We have calculated the expected mortality rate in both arms of the study in both countries. A comparison of these has been done to analyze differences in expected versus observed mortality in both arms. Most important findings were: In both countries in the control group incidence of PC had almost doubled compared to expected mortality and the mortality reduction was larger in the youngest men. However, Sweden had a much more pronounced mortality reduction in all age groups. Contamination looks more common in Finland and probably explains partly the differences, but in no way all of it. Most probably there are also differences in the biology of the cancers.

**3. Describe how the project has increased our knowledge of the prevention, cause and/or cure for cancer (max. 150 words)**

The Swedish algorithm, where men were screened every second year, was more effective than the Finnish one, screening men every 4 year, in terms of mortality reduction. The project also suggested the importance of differences in the biology of PC in Sweden and Finland, which will be a topic of further studies.

**4. Outline how Nordic cooperation has added value to this project (max. 100 words)**

By combining and comparing results from the Finnish and Swedish screening studies, we were able to find answers to how the natural history of PC and differences in screening algorithms influenced the outcome of these studies in terms of mortality reduction. Further analyses will be performed utilizing biological samples from the two trials during 2014 with the support of NCU grant given for this year, aiming to give answers to the biological differences of the cancers in the Swedish and Finnish populations and how to optimize diagnostic tools to identify clinically significant PC.

**5. Publications resulting from the NCU research grant**

1. Manuscript with the title "Analysis of observed versus expected prostate cancer mortality in two centers of the European Randomised Study for Screening for Prostate Cancer (ERSPC)" is under preparation.
2. Partly supported by the NCU grant:
  - Veitonmäki T, Tammela TL, Auvinen A, Murtola TJ. Use of aspirin, but not other non-steroidal anti-inflammatory drugs is associated with decreased prostate cancer risk at the population level. *Eur J Cancer* 49:938-945, 2013.
  - Kilpeläinen TP, Tammela TL, Malila N, Hakama M, Santti H, Mänttinen L, Stenman UH, Kujala P, Auvinen A. Prostate Cancer Mortality in the Finnish Randomized Screening Trial. *J Natl Cancer Inst* 105:719-725, 2013.