

With increasing attention on quality of life aspects of cancer treatments, more knowledge is required on the mechanisms of development and management of late side effects. This knowledge should enable the development of effective intervention strategies to prevent or ameliorate the development of heart damage in patients following radiation therapy. Funded by the Dutch Cancer Foundation, grant NKI 2008–3993 and European Atomic Energy Community's Seventh Framework Program, grant 211403 (Cardiorisk).

8 INVITED

Modern Radiotherapy Techniques to Spare Normal Tissues

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Modern radiotherapy techniques have been used to reduce the dose to radiosensitive critical structures close to tumour bearing tissues. Randomised trials have demonstrated that clinically relevant reductions in normal tissue toxicity can be achieved. This lecture will provide an overview of this topic.

Scientific Symposium (Sat, 24 Sep, 11:30–13:15) Telethinking in Cancer Care

9 INVITED
Technologies and Challenges for Nurses and Health Care

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Health systems are facing unprecedented challenges at this time. Not only are the social demographics of many countries changing but also the patterns of disease. The economic crisis in 2008 has underlined the connectivity that we all can experience in our daily lives. Some aspects of globalisation are very positive others can present problems. What is certain is that the world's population is not going to require less access to nursing care in the future and technology will play an increasing role in its delivery. This paper explores a range of challenges as well as the opportunities that the nursing profession faces as we move forward through increasing use of technologies and sets out how nurses can play a more proactive role in designing our profession's destiny as well as securing increased access to quality services for citizens.

10 INVITED
Patient-Centred Technologies – the Future is Here

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By 2030, there will be almost 21.4 million new cases of cancer diagnosed annually and more than 13.2 million deaths, compared to 12.7 million new cases and 7.6 million deaths in 2008, according to the International Agency for Research on Cancer (2010), with half of these likely to be in Europe. The scale of the challenge to deliver optimal care to this population means that we have to consider a different model of delivering health care that will involve a shift from hospital based care to much more care being delivered in, or close to, people's home. Changing the way we deliver healthcare outside of an acute hospital, either on an outpatient basis or in local communities has indisputable implications for patients receiving cancer treatment, and for patients with other chronic conditions, as they can experience multiple needs in relation to symptom management, self-care and support. Cancer treatment related toxicities often lead to distressing and potentially life threatening side effects (Kuderer 2006), which are associated with poor treatment adherence, impaired quality of life, increased infections, and mortality and time spent in hospital. Supporting patients, who are experiencing such morbidity, within their own home or local community will be key to ensuring optimal patient outcomes. Technology is now accepted as pivotal to future health care delivery not only to enable safe and effective evidenced based care, but also a means to delivering affordable care across populations. Virtual supportive care networks that utilise technology to enable individualised patient centred care are being used for patients with chronic conditions and allow patients to remain at home and access appropriate supportive care as and when required. Within cancer care there has been a reliance on hospital based, specialist care however there is a growing recognition that telehealth systems, for example ASyMS, have the potential to transform supportive care outcomes in patients with cancer by allowing health professionals to respond in 'real time' to a patient's actual symptoms. The ability to capture symptom data in 'real time' is now regarded as the gold standard to allow rapid clinical decision making and intervention to improve patient outcomes.

Telehealth systems will mean real time patient reported outcomes become standard care and linking such systems to point of care testing devices, such as white cell monitoring, will transform the management of patients with cancer.

11 INVITED
Using Technology in Palliative Care – a Reality

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The term given to the remote monitoring of patients through information and communication technologies is "Telecare" or "Telehealth" and is being evidenced increasingly as a means of addressing the increased demand on health services alongside more patient-focused care. However, there is a relative lack of evidence based research in the use of Telehealth in palliative care in the UK, particularly in Scotland, in comparison to other countries such as Australia, Canada and the USA. Telehealth is, however, gaining widespread acceptance and is both usable by, and acceptable to, patients and health professionals in palliative care settings, particularly in light of the need for increased home care for palliative patients and ongoing symptom management. This paper will report on the type of telehealth applications used in palliative care, and discuss patient and Health Professional experience of using telehealth applications in palliative and end of life care.

Scientific Symposium (Sat, 24 Sep, 11:15–13:15) Small RNAs and Cancer

12 INVITED
MicroRNAs and Regulatory RNA Binding Proteins in Cancer

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MicroRNAs (miRNAs) are genes involved in normal development and cancer. They inhibit gene expression through interaction with 3'-untranslated regions (3'UTRs) of messenger RNAs (mRNAs), and are thought to regulate a large proportion of protein coding genes. Patterns of mis-expression of miRNAs in cancer suggest key functions of miRNAs in tumorigenesis. We performed in the past genetic screens to identify cancer functions of miRNAs. Using a library of vectors expressing human miRNAs and we identified miRNAs that cooperate with oncogenes in cellular transformation, which stimulate cellular migration, invasion and metastasis, as well as key regulators of tumour suppressor genes.

In recent years, it is becoming apparent that the miRNAs themselves are subjected to intense regulation at various levels. miRNA biogenesis and activity can be kept in pace by RNA-binding proteins (RBPs). We show that interplay between RBPs and miRNA exists that affects gene expression in processes such development and cancer.

13 INVITED
Causes and Consequences of microRNA Dysregulation

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During the past several years it has become clear that alterations in the expression of microRNA genes contribute to the pathogenesis of most, perhaps all, human malignancies. These alterations can be caused by a variety of mechanisms, including deletions, amplifications or mutations involving microRNA loci, by epigenetic silencing or by dysregulation of transcription factors targeting specific microRNAs. Since malignant cells show dependence on the dysregulated expression of microRNA genes, which in turn control or are controlled by dysregulation of multiple protein coding oncogenes or tumour suppressor genes, these small RNAs provide important opportunities for development of future microRNA based therapies.

14 INVITED
Deregulated tRNA Expression in Cancer

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RNA polymerase (pol) III is responsible for ~10% of nuclear transcription and makes a variety of short non-coding RNAs, including tRNA. Levels of the initiator tRNA are limiting for translation in some cell types. Mild overexpression of this tRNA not only stimulates protein synthesis, but