Special Session (Thu, 24 Sep, 11:15−12:15)
Locoregional control of advanced breast cancer

326 INVITED

Locoregional control in metastasized breast cancer, the role of the radiation oncologist

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The oncologic society tends to act according to certain assumptions or axioms, derived from scientific developments in history. Sometimes these assumptions limit our openness towards new possibilities and hence impair developments. One of these axioms is the incurability of stage IIIB and IV breast cancer. It was long believed that locally advanced breast cancer was to be treated with palliative intent and that locoregional treatment was meant (only) to avoid local complaints. This attitude still holds for the 3.5% of patients presenting with primary metastasized disease.
Recently it is clearly shown that optimal locoregional radiotherapy in addition to surgery and systemic therapy improves long term survival in early stage breast cancer. It is well known that surgery as well as radiotherapy are much more potent in achieving definitive eradication of macroscopic tumours than systemic treatment alone. Also it has become clear that breast cancer metastasizes in an orderly manner, implying that distant metastases are usually much smaller than the locoregional disease. In other words, these patients tend to have a huge locoregional tumour load, far too much for systemic treatment alone.
Though hard evidence is lacking, several reports suggest that survival or distant progression free interval may be prolonged in M1 patients after resection of the primary tumour. This phenomenon might be explained by a rapid diminishing of tumour stem cells below the threshold of (further) metastatic spread, cessation of tumour mediated immune suppression or of other humoral factors facilitating adhesion and outgrowth of metastatic disease. Also eradication of quiescent tumour stem cells, believed to be resistant to systemic treatment might be explanatory. Although these explanations are hypothetic, we should be open minded, and not stick to our assumption that patients with primary metastatic disease should be treated strictly palliative by systemic means only.
The role of intensive locoregional treatment consisting of surgery or high dose radiotherapy, or both, in patients with primary metastatic breast cancer is worth exploring in clinical studies.

Special Session (Thu, 24 Sep, 11:15−12:15)
Drug and lifestyle mediated prevention intiatives in Europe

327 INVITED

Obesity and overall cancer risk

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Background: Increased body adiposity is an established risk factor for cancer development. The author and collaborators recently reported findings from a standardised meta-analysis (Renehan et al. Lancet 2008;371:569–578) of prospective observational studies quantifying risk associations with body mass index (BMI) in 20 cancer types. These analyses demonstrated that associations are: (i) modest (risk estimates range from 1.1. to 1.6) per 5 kg/m^2 incremental increase; (ii) sex-specific; (iii) exist for a wider range of malignancies than previously thought; and (iv) are broadly consistent across geographic populations. Given the biological plausibility, the consistency of associations, and the sufficiently long latency times between BMI measurement and cancer occurrence, these associations are probably causal. Added to these, recent data from cohorts of grossly obese patients undergoing bariatric surgery demonstrate the strongest evidence yet that weight reduction may confer a cancer protective effect.
Methods: The emphasis of our obesity and cancer research group has been to explore mechanistic links between obesity and cancer (both risk and progression) based on robust clinical observations, which in turn direct our questions in the laboratory. Hence, the group works within an international collaborative network of epidemiologists and cancer modeller, and translate these observations with in vitro models (e.g. of chronic insulin exposure) and animal models (e.g. obese mice and tumour growth).
Results: Our recent further analyses of the forementioned meta-analysis database has demonstrated and quantified the following: (i) the associations between lung cancer and BMI are heavily confounded by smoking; (ii) the associations between BMI and risk of post-menopausal breast cancer and endometrial cancer are dependent on HRT status; and (iii) the BMI-cancer risk association is generally linear but there are examples of non-linearity. These point to a diversity of potential processes operating for different cancer types – it is unlikely that there is a "one system fits all" mechanism.
Conclusions: As the obesity epidemic shows few signs of abating, incidences of obesity-related cancers may rise. There is an urgent need to better understand the biological and molecular mechanisms underpinning the link between obesity and different cancers, so that targeted-based strategies are developed to integrate with population-based weight control policies.

329 INVITED

Drug/lifestyle and colon cancer prevention

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Lifestyle changes have been advocated for prevention of colorectal cancer. Epidemiological studies have shown that diets high in vegetable fibers can reduce the risk of colorectal cancer. Similar observations have been made for folic acid, calcium, magnesium, and vitamin B6. However, there are also conflicting data as to the influence of these dietary factors on the incidence of colorectal cancer. Alcohol consumption, a low level of physical activity, obesity and insulin resistance have all been shown to positively correlate with the risk for colorectal cancer. It is less clear, however, to what extent modifications in diet, physical activity and other aspects of lifestyle can influence an individual's risk of developing colorectal cancer. Since most of the above mentioned factors have several benefits besides a reduction in cancer incidence as well as little side effects, recommendation are not difficult to make.
Observational as well as randomized studies have shown non-steroidal anti-inflammatory drugs (NSAIDs) to reduce the risk of developing colorectal adenomas as well as invasive cancers. For acetylsalicylic acid (ASA) continuous medication over several years seems to be necessary to reduce the incidence of colorectal cancer after a latency period of approximately 15 years. There are conflicting results regarding the required daily dose. Cyclooxygenase-2 (COX2) specific inhibitors like rofecoxib and celecoxib have been shown to reduce the number of colorectal adenomas not only in high-risk patients with familial adenomatous polyposis (FAP), but also the risk to develop sporadic colorectal adenomas. In addition there is a growing body of evidence that the combination of difluoromethylornithine (DFMO) and sulindac may have a role in chemoprevention of colorectal neoplasias by interfering with the polyamine synthesis pathway.
Any chemo preventive interventions have to be safe to be recommended for the general population. However to date data on risk/benefit ratio are scarce. In addition early detection of colorectal cancer and precursor lesions will get more sensitive in near future by an increasing use of screening colonoscopy and the development of molecular stool and blood tests. Therefore the benefits of any chemo preventive efforts have to be thoroughly weighed against the risks of drug side effects as well as the increasing likelihood of early detection.
While certain life style modifications can clearly be advised to reduce the risk of colon cancer, data on risk/benefit ratio of chemoprevention for colorectal cancer are not sufficient to make a recommendation.

Special Session (Thu, 24 Sep, 11:15−12:15)
Endoscopic treatment of gastroesophageal cancer

331 INVITED

New developments in the endoscopic detection and treatment of early Barrett's neoplasia

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The last years have brought a dramatic increase in the quality of gastrointestinal endoscopy. State-of-the-art white light endoscopy nowadays is of superb quality due to CCDs that consist of over 1 million pixels, optimal post-processing of the CCD information, and transmission on high definition television screens. The combination of optical and electronical zoom and the use of filter technology that either change the composition of the exitation light or, by post-processing, selected specific information coming from the CCD, allows for detailed imaging of the mucosal and vascular patterns. Examples of these are techniques known as NBI, FICE, or I-scan. In autofluorescence endoscopy the different fluorescent properties of dysplastic and non-dysplastic tissue can be used to identify early neoplastic lesions that are inconspicuous with white light endoscopy.

Detailed imaging of areas of interest on microscopic level is now possible by the use of confocal microscopes incorporated in the endoscope or in small mini probes.
Early neoplastic lesions can effectively be treated by focal removal using endoscopic mucosal resection (EMR). Until recently, the EMR-cap was the most common technique for this purpose but with multi-band mucosectomy an easier endoscopic resection technique has come available.
After focal removal of neoplastic lesions the remaining Barrett's segment remains at risk for further neoplastic progression. Additional treatment to remove this risk is therefore required. Complete endoscopic resection of the Barrett segment suffers from the high rate of the stenosis. A new endoscopic ablation technique, known as radiofrequency ablation may surpass this problem. Recent studies suggest that this technique is highly effective, not associated with severe complications, or esophageal stenosis and results in a complete endoscopic and histological removal of the whole Barrett's segment.
The combination of state of the art endoscopic imaging and these new endoscopic treatment modalities will result in the effective endoscopic management of patients with early Barrett's neoplasia and should be incorporated in guidelines as well as training programs.

Special Session (Thu, 24 Sep, 11:15−12:15)
New approaches for evidence generation of novel radiation technologies

333 INVITED

Development and assessment of novel radiation techniques – a medical physics perspective

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The medical physics community has a long and successful history in the development and advancement of novel methods for the detection and treatment of disease. These advancements are typically motivated by the desire to improve the likelihood of managing the disease and/or to minimize any therapy-induced toxicity. While this desire attracts bright young physicists, engineers, and computer scientists to the field, it is not sufficient on its own to bring about any substantive change in clinical practice. Such change needs the maturation of specific technical, physical or biological challenges that can be articulated and formulated. The development of such 'validated problem sets' is an important precursor to advancing new treatment techniques – it provides the foundation for the research and development process and assures the developments will contribute to clinical care in a meaningful way. Given the background of the medical physics community, these individuals are able to bring a wide variety of novel technologies to address the challenges. Over the past 10 years, the field of oncology has seen an explosion in the number of technological advances that are employed in the treatment of cancer – particularly in the application of radiation therapy. The role of the medical physicist in these activities is not strictly defined, but focuses on methods of reducing uncertainty, increasing conformality, and assuring safety. Furthermore, it can be anticipated that the rate of novel technology development on these topics will increase, including the development of minimally invasive surgery, robotic interventions, and the development of particle therapy. With the development of novel diagnostic or therapeutic approaches, the question of cost and benefit will and should arise. One may ask, 'What is the role of the medical physicist in this activity?" Clearly, as a functioning member of the health care profession, medical physicists have an obligation in this regard as well. This could be seen as placing the medical physicist in the potentially conflicted role of both advancing technology for the benefit of society, as well as, engaging in its broad use and evaluation. However, the medical physicist needs to rise above this simplistic presentation of a more complex conflict. The solution to this dilemma is found in our training as physicists and engineers. We must focus on the clear formulation of the problem we are seeking to address and emphasize the importance of being rigorous in our evaluation and comparison of arising technologies. In this presentation, the challenge of evaluating technological developments in radiation therapy will be discussed in an 'engineering paradigm' that can be contrasted with conventional 'evidenced-based' approaches.

Special Session (Thu, 24 Sep, 11:15−12:15)
Future trends and EONS projects

334 INVITED

Prostate cancer and supportive care: European training needs analysis

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Prostate cancer is increasing in incidence and will continue to place a significant burden on the health care systems of all developed countries. In Europe it is estimated that more than 300,000 new cases were diagnosed in 2006 and that this number will continue to rise. Approximately 20,000 men are being diagnosed with prostate cancer in the UK alone each year [1] and it is expected that over a third will die of the disease. Across Europe there are currently more than two million men living with prostate cancer and a man has a 1 in 12 lifetime risk of being diagnosed with prostate cancer as a result of clinical symptoms, signs or PSA testing [2]. It was only in 2001, however, that the European Association of Urology issued guidelines on the medical management of prostate cancer and there are still no known consensus statement of the nursing management or supportive care needs of these patients across Europe [2]. Research into the role of nursing or their training needs is also lacking although some evidence exists from the UK that men with prostate cancer feel that information and co-ordination of care could be improved [3]. The current PSA (Providing Supportive care & Advice) project has four phases:

1. To identify training priorities of oncology/urology nurses from 7 European countries (Denmark, France, Spain, Netherlands, Turkey, Sweden, Ireland and United Kingdom) using an Internet survey approach. The target is to obtain 100 responses from each country.
2. To survey a sample of junior medical staff using a similar method and compare their learning needs with those of the nurses.
3. To compare the nurses and doctors views with the expressed views of a sample of men living with prostate cancer.
4. To design and evaluate an education package on the topic of prostate cancer care in response to the findings.

This presentation will provide information on data from obtained form phase 1 and discuss the contextual challenges and benefits of this type of educational needs assessment [4]. The future role of EONS in advancing professional cancer education across Europe will also be discussed.

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335 INVITED

What does the future cancer workforce need to look like?

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Future cancer health services have a difficult balancing act, firstly between increasing demands for cancer care and diversity of provision; secondly between the need to respond to peoples cancer health needs during therapy but also to promote health and provide rehabilitation for the increasing number of cancer survivors. There are a number of challenges we face in developing the nursing workforce, from the increasing age of the EU population, projected shortfall in number of nurses and skills and knowledge to provide such nursing in the future diversity of cancer health care provision.
Epidemiological projections within the EU suggest that the Increasing life span of the older population will impact on cancer incidence. It is predicted that between 2008 and 2060 the population of the EU aged over 65 is projected to increase by 66.9 million. Cancer as a disease predominantly of older age is therefore likely to increase in incidence and put pressure on existing health services. Issues such as late detection of cancer in older age, toxicity differences, co morbidity and supportive care requirements mean that nurses need to be more aware of age related factors and have a broader knowledge of co morbidity. Workforce issues in the support of informal carers, as well as nurses in general and community settings will need to be addressed if we are to maintain quality cancer care. A further effect of the changing demographic is that there will also be fewer