nurses who train on-the-job. Most countries do not have focused education programmes for RTTs.

Conclusions: The results indicate heterogeneity with regards to appropriate levels of infrastructure. Some countries reach (Turkmenistan) or approach (Azerbaijan, Russia, Belarus and Ukraine) 1 TT machine/1000 cancer patients/year relative to 2012 cancer statistics. These indicators represent an approximate estimate of resource availability, but do not reflect patient access or quality of the radiotherapy services.

Teaching Lecture: Lung SCLC-How can we improve survival further with radiotherapy?

SP-0194
Lung SCLC-How can we improve survival further with radiotherapy?
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Radiotherapy (RT) has always been kept, one way or another, as a part of the multidisciplinary management of small-cell lung cancer (SCLC). In 1957, a clear distinction between two categories of SCLC - limited-disease (LD) and extensive-disease (ED) - depending on the possibility of inclusion of all possible disease sites into a single radiation portal - was made. This reflects a historically recognized value of RT for treatment outcome of SCLC. Nowadays, in the era of the use of modern technologies for imaging and RT planning, the distinction between LD and ED is made on the basis of the presence of distant metastases. But still we weigh up a value and the extent of improvement of outcome with RT use separately for LD and ED.

Thoracic RT in combination with chemotherapy and prophylactic cranial irradiation (PCI) increase 3-year survival by approximately 5% each, as shown in the meta-analyses. One randomized phase III trial demonstrated also a survival advantage by PCI of 13.5% at one year for ED-SCLC. Recently, it was demonstrated in a randomized trial that the addition of thoracic RT (30 Gy in 10 fractions) after any response to chemotherapy in ED-SCLC improved 2-year survival. Although chemotherapy in ED-SCLC improved 2-year survival, there is still a room for improvement in some areas which are still under investigation as an issue of radiotherapy dose, timing, fractionation and target volumes. Current recommendation for LD-SCLC is the use of radio-chemotherapy with early accelerated hyper-fractionated RT. However, such an approach may not be convenient and its toxicity makes it unfeasible for fragile and/or elderly patients. The use of newer RT technologies and proper selection of patients for aggressive radio-chemotherapy schedules are expected to improve treatment tolerance. A small improvement of survival obtained with PCI may be compromised by worse quality-adjusted life expectancy in long term survivors, as the pronounced effect of neurotoxicity (NT) becomes apparent after several years. What factors should be considered for an individual patient to find a balance between benefits of prolongation of survival by the reduction in the incidence of brain metastases and the risks of short-term and long-term toxicity? Over the past fifteen years, since an influence of PCI on survival was first demonstrated, magnetic resonance imaging (MRI) has become the imaging technique of choice in patients suspected of brain metastases. This change may decrease the number of patients eligible for PCI, as MRI is more sensitive than computerized tomography in detecting brain metastases. For better understanding of the extent and severity of late NT, long-term follow-up of patients included in prospective studies is needed. Also, some attempts have been made to prevent the development of neurocognitive decline attributed to brain irradiation. Long-term outcome of such approach is awaited.

Thoracic RT and PCI obviously do not decrease the progression rate outside the thorax and brain, thus the addition of RT to sites of extrathoracic and extracerebral metastases might also merit investigation. It is in line with growing interest and increasing data that accumulate evidence on the value of RT in the treatment of oligometastatic disease for other cancers. Such an approach is being investigated in the randomized trial by the Radiation Therapy Oncology Group.

Advancements in RT technologies proved to increase survival rates in population-based studies for Non-SCLC patients. It is reasonable to expect that it is also valid for SCLC patients; better radiation volume definition prevents from geographical misses and reduces unnecessary healthy tissues irradiation. All these issues will be discussed in detail during the lecture.

Teaching Lecture: On the need of Population-based studies of arbitrary cancer management in the elderly

SP-0195
On the need of Population-based studies of arbitrary cancer management in the elderly
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Much has been said already on the complexities and unknowns in management of cancer in the elderly, by 2020 more than 50% of all newly diagnosed patients with cancer older than 65 years, >30% when >75 years and about 10% over 85 years in most European countries. Above age 65 and rising with age, about 10% of newly diagnosed cancers is a second cancer, excluding those in the same organ site [skin - basal cell carcinoma (BCC) and large bowel as well as...
contralateral cancers in lung, breast or kidney] *Table shows higher proportions of older patients over time in an area with many male smokers in the past and (too) many female smokers in the near future.

The clinical dilemmas are often delineated as lack of evidence-based guidelines but are the consequence of aspects like: host heterogeneity by increasing (with age) presence of co-morbidities at diagnosis, social support and distance to radiotherapy, and degree of subspecialization (often introduced by younger colleagues) and technical and communicational infrastructure for consultation, protocollization, and consensus building; this not just implies absence of guidelines or randomised research, but also inadequate observational research of more less selected patients. In fact complex patients with clinical dilemmas are the raison d'être for doctors versus robots. With respect to 3rd line radiotherapy, there are by definition selections in referral by the various surgeons, also varying by hospital of diagnosis and primary surgical or hematologic treatments. Intriguingly (certainly for patients) both synergy and competition between the various modalities which is a major rationale for multi-disciplinary consultations. Given all these and even with perfect knowledge which often become rituals in case of too much routine.

In the presentation several data will be presented on variation in referral whereby co-morbidity plays a role in 2 directions: higher referral rates for curative treatment in case of more co-morbidity, radiotherapists seeing patients with a worse prognosis or lower referral rates in case of adjuvant therapies administered to patients with serious co-morbidity at older age. But observational studies of prognosis and other outcomes (in fact throughcomes) also need to be devised with a hypothesis, because otherwise too many doctors will end up in the datacemetery, buried by their own big data collections. Thereby also discerning two major categories of older patients: 1. the troisième age group of between 60 and 80 years with modest serious co-morbidity and in principle (yes, unless….) following the guidelines based on clinical trials etc. 2. the (proto)frail vulnerable group over 75 - 80 years who in fact do not qualify any more for the usual aggressive and toxic oncological therapies, unless enough arguments can be found for (and by) that patient, including a gamble. The research strategy consists of seeking for information which may make clear either what the benefits and/or harms will be of potential overtreatment versus of undertreatment like higher locoregional recurrence rates. But comparative interpretation of such data might only be meaningful when such analyses are done on population-based series of patients in order to have the unferred patients in the picture. And the unreferral rates usually increase with age.

In the South of the Netherlands we also paid attention to potentially increasing referral rates to radiotherapy by making GPs more aware of the possibilities of fast track radiotherapy for symptoms after we found out that most GPs indicated to have had minimal (post)graduate education in radiotherapy.

References:
Aarts MJ (second author) Clin Oncol 2012 and Radiotherapy Oncol 2011 (patterns of radiotherapy in the Netherlands)

Teaching Lecture: An overview of recent detectors

SP-0196
An overview of recent detectors
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