

data from the literature and results from our own Dutch study in rhabdomyosarcoma will be used as illustration.

In addition promising new ways of treatment in sarcoma of adolescents will be addressed, of which the focus will be on IGF-1R in Ewing sarcoma. Data from the literature suggest that adolescents and young adults (AYA) with cancer do badly compared with children. The reasons are poorly understood. Whereas improvement in the survival of children with pediatric malignancies has been shown over the last decades, this is less the case for sarcomas when occurring in adolescence. The question remains whether this is due to "nature or nurture". For rhabdomyosarcoma, Ewing sarcoma and osteosarcoma reasons for different outcome will be discussed. Do these tumors have a different biology when presenting in childhood or at AYA age? Evidence suggests that adolescents with rhabdomyosarcoma present with a more advanced stage of disease, which might be related to tumor biology, but also to patient factors. Is the chemosensitivity different between children and adolescents or are adolescents underdosed when being treated for sarcoma as compared to children?

In the second part of the talk aspects of new treatment options in sarcoma of adolescence will be discussed, with special focus on the intriguing results of IGF-1R antibodies in Ewing sarcoma patients. The difficulties of response prediction on IGF-1R in Ewing sarcoma will be addressed, which will be illustrated with new data from our own series of Ewing sarcoma patients.

Finally also other potential targets of treatment of sarcomas in adolescents, such as mTOR, will be addressed briefly.

Special Session (Thu, 24 Sep, 11:15–12:15) Career development opportunities after your degree

346 INVITED
Grant opportunities in the United States: funding for oncology research

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Many professional societies and private foundations within the United States fund international oncology research. These programs include training and career development grants targeted for young oncologists. This session will provide an overview of the different funding opportunities for cancer research that are available to early-career oncologists outside of the United States. Helpful hints on how to successfully compete for international funding will also be discussed.

Special Session (Thu, 24 Sep, 11:15–12:15) Lymphadenectomy for GI cancer – does it make a difference?

347 INVITED
Lymphadenectomy in cancer of the oesophagus and gastro-oesophageal junction (GOJ). Does it matter?

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Up to 85% of patients with cancer of the esophagus or GOJ first present with dysphagia and weight loss caused by obstruction of the oesophageal lumen by the tumour. Within this subset of patients another 80% have lymph node involvement.

Surgery is the mainstay of therapy in absence of systemic metastasis. During the last three decades technical modifications and improvements in perioperative care substantially reduced mortality and morbidity figures even in the case of the more extended, mostly transthoracic, oesophagectomy and lymphadenectomy.

Yet, in contrast to gastric and colorectal cancers where the extent of lymphadenectomy has been shown to be important for both staging and survival, controversy persists regarding the benefits of lymphadenectomy in cancer of the oesophagus and GOJ.

At this point there is only one published randomized controlled trial on adenocarcinoma of the oesophagus and gastrooesophageal junction (GOJ) assessing the potential impact of lymphadenectomy. This trial failed to show a difference between the transthoracic extended lymphadenectomy versus the transhiatal resections without lymphadenectomy. Although, a net trend toward improved survival with the extended approach was observed. A subsequent subanalysis showed in adenocarcinoma of the

distal esophagus a significant 17% survival benefit after transthoracic oesophagectomy with two field lymphadenectomy.

Moreover there is an increasing number of publications both from Asia and the Western hemisphere indicating that more extensive lymphadenectomy results in a survival benefit. Indeed nowadays overall 5-year survival figures after extended lymphadenectomy often exceed 40% and reported 5-year survival figures for stage III disease vary between 25% and 35%, survival figures rarely obtained after resection without such lymphadenectomy.

However it remains unclear what constitutes optimum lymphadenectomy. Using random forests multivariable regression models it is concluded that to maximize 5-year survival a minimum of 10 nodes should be resected for T1 cancers, 20 nodes for T2 cancers and 30 or more nodes for T3-T4 cancers [1].

From a recent published multicenter international study [2] it appears that the number of removed nodes is an independent predictor for survival. The optimal threshold for this survival benefit was the removal of minimum 23 nodes and survival continued to improve as the number of nodes removed increased. Comparing 5 year survival figures of patients who had 23 or more nodes removed to those with less than 23 nodes removed indicated a significant survival benefit in all stages I, II and III in favour of 23 or more removed nodes.

Conclusion: Although for cancer of the oesophagus and gastro-oesophageal junction the final proof is lacking there is from literature data a growing body of evidence indicating that extended lymphadenectomy has a beneficial impact on survival without an increase in postoperative morbidity and mortality. The survival figures obtained after such type of surgery are the gold standard to which other therapeutic regimens are to be compared.

References

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348 INVITED
Lymphadenectomy and strategies for regional control in gastric cancer

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Gastric cancer recurs predominantly in regional nodes and the peritoneal cavity; isolated distant recurrence is infrequent. Treatment of recurrent gastric cancer only rarely generates long-term survival. Appropriate initial treatment of gastric cancer minimizes lymphatic/regional recurrence, and data indicate that improved regional control significantly improves survival. Appropriate initial surgical and adjuvant strategies for minimizing regional recurrence will be reviewed. Examples include "low Maruyama Index" surgery, and adjuvant chemo-radiation. Current and future trials incorporate both strategies.

349 INVITED
Lymphadenectomy in colorectal cancer – does it make a difference?

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Current results of meta-analyses and prospective randomized trials comparing radical versus limited lymphadenectomy in colorectal cancer will be presented. As a consequence lymphadenectomy can be considered rather predictive than prognostic. In particular in rectal cancer Total Mesorectal Excision (TME) and a negative Circumferential Resection Margin (CRM-neg.) are of more relevance for prognosis than the total number of excised lymph nodes. Furthermore, the lymph node ratio of excised/metastatic lymph nodes is a negative prognostic marker. Since prognosis in node positive colon cancer patients can be improved by adjuvant chemotherapy, in the histopathological work up a more accurate and simple lymph node staging is mandatory. For colon cancer this probably can be achieved by sentinel lymph node biopsy with multisection and immunohistochemical examinations. This results in lymphonodal upstaging in about 20–25% even in patients who underwent extended conventional lymphadenectomy in colon cancer. In the future molecular marker analysis or pre operative tumor biopsy may tailor the indication for radical lymphadenectomy or even make it history in most of the colorectal cancer surgeries.