Supplementary material for Kristensen I. et al. Assessment of volume segmentation in radiotherapy of adolescents; a treatment planning study by the Swedish Workgroup for Paediatric Radiotherapy, Acta Oncologica, 2013; 126–133.

Appendix

The appendix consists of except from the three protocols, according to which the children were treated.

Case 1 – SIOP 2001 Nephroblastoma.

"The boundaries of the tumour and kidney during surgery must be marked with clips and in the case of areas suspicious of incompletely resected disease these should be marked with clips (material which does not interfere with CT or MR imaging) as well. A margin of one cm should be taken superior, lateral and inferior of these clips. The medial border always encompasses the full width of the vertebral bodies. In the case of pre-operative or intra-operative rupture the anatomic location and the intra-abdominal space (intra/retro-peritoneal) should be clearly indicated in the surgical note and drawing. Infiltration into the peri-renal fat, involved lymph nodes, macroscopic incomplete resection, microscopic or macroscopic ruptures have to be stated clearly.

Flank RT

CTV: This encompasses the extent of post-chemotherapy and pre-operative macroscopic tumour and the kidney according to the surgical and histopathological reports and according to the extent on CT-scan/ ultrasonography. The margin for CTV is 1 cm. If there is no pre-operative CT-scan CTV is delineated by clips at the boundaries of the tumour and kidney placed by the surgeon during surgery. The margin for CTV is 1 cm beyond the clips. The ***treated volume*** *should extend across the midline to achieve homogeneous irradiation of the full width of the vertebral bodies."*

Case 2 – GPOH-HD 2002 interim protocol.

"Radiation therapy to all primary infected lymphatic regions for all patients of therapy group 2 + 3 and for therapy group 1 patients who are not in complete remission after chemotherapy. The standard dose is 20 Gy."

Case 3 – CWS 2002p high-risk protocol.

"Patients with favourable histology (RME [N0&N1]) with a measurable response of < 2/3 > 1/3 tumour volume reduction (poor responders) as well as patients with unfavourable histology and a response of > 2/3 tumour volume reduction (good/complete responders) at week 9 at which time the conditions for a successful second-look-surgery by a pre-operative irradiation could be improved (for example by volume reduction of residual tumour), will be irradiated pre-operatively with 44.8 Gy. For patients with unfavourable histology and tumour response of < 2/3 > 1/3 the order of local secondary measures must be decided on an individual basis. The total dose will be administered through accelerated hyperfractionation using two treatment sessions per day five days per week. The fraction dose is 1.6 Gy, the daily dose is .,2 Gy, the weekly dose is 16 Gy. The time between the two daily fractions must be at least 6 hours. The standard target includes the documented or presumed primary tumour region with a margin of at least 2 cm. It is of particular importance, when irradiating soft tissue sarcoma in the pelvic region, that the growth zones in the pelvic bones and/or hips is spared to avoid growth impairment by keeping the dose to these areas as low as possible. This may, however, not lead to an insufficient margin (2cm) to the tumour."[4]

Case 4 – no standard treatment protocol was available.