

Supplementary material for Moghaddasi L. et al. Current challenges in clinical target volume definition: Tumour margins and microscopic extensions, Acta Oncologica, 2012;51:984–995.

Supplementary Appendix

Supplementary Appendix Table I. A summary of clinical findings regarding microscopic extension of tumour in various sites.

Year/Author	# patients	Organ site/original diagnosis	Conventional margin of CTV	Proposed margin of CTV	Range of ME	Mean of ME	Median of ME
2000/Giraud [4]	32	NSCLC/ADC	5 mm	8 mm	0–12 mm	2.69 mm	2.7 mm
2000/Giraud [4]	38	NSCLC/SCC	5 mm	6 mm	0–13 mm	1.48 mm	2.8 mm
2000/Kara [14]	17	NSCLC	1.9 cm (surgical margin)	1.5 cm	0–3 cm	1.1 cm	1.5 cm
2003/Li [8]	43	NSCLC/ADC	NA	7 mm	NA	2.18 mm	NA
2003/Li [8]	43	NSCLC/SCC	NA	5 mm	NA	1.33 mm	NA
2007/Grills [9]	11	NSCLC/ADC/ grade 1	1.5–2cm (ME and set-up)	9 mm	0–15 mm	10.1 mm	NA
2007/Grills [9]	15	NSCLC/ADC/ grade 2	1.5–2 cm (ME and set-up)	7 mm	0–10 mm	7.0 mm	NA
2007/Grills [9]	10	NSCLC/ADC/ grade 3	1.5–2 cm (ME and set-up)	4 mm	0–6 mm	3.5 mm	NA
2007/Yuan [11]	101	NSCLC/lymph node size <20 mm	0–25 mm	3 mm	0–7 mm	0.5–0.6 mm	NA
2007/Yuan [11]	101	NSCLC/20 <lymph node size <30 mm	0–25 mm	8 mm	0–12 mm	1.6 mm	NA
2000/Jansen [26]	1283	Brain/ high grade glioma	2–3 cm	2 cm	NA	NA	NA
2006/Baumert [42]	18	Brain met/NSCLC	NA	0.63 mm	0–0.63 mm	0.44 mm	NA
2006/Baumert [42]	8	Brain met/SCLC	NA	1.07 mm	0–1.07 mm	0.96 mm	NA
2006/Baumert [42]	5	Brain met/melanoma	NA	1.19 mm	0–1.19 mm	0.84 mm	NA
2006/Baumert [42]	5	Brain met/ breast cancer	NA	0.28 mm	0–0.28 mm	0.26 mm	NA
2010/Minniti [33]	105	Brain/glioblastoma	NA	Residual tumour + 2 cm	NA	NA	NA
2010/Matsuo [31]	32	Brain/glioblastoma	NA	T ₂ -MRI (edema) + 2 cm	NA	NA	NA
1999/ Davis [20]	105	Prostate/mean PSA:17.9, bGs:6.3	NA	3–5 mm	0.04–4.4 mm	0.81 mm	0.5 mm
2000/Sohayda [21]	46	Prostate/PSA >10, bGs >7, T-3	NA	4 mm	0.1–10 mm	NG	1.3 mm
2000/Sohayda [21]	33	Prostate/PSA <10, bGs <6, T-1,2	NA	4 mm	0.1–5 mm	NG	0.6 mm
2003/Teh [23]	185/712	Prostate/median & mean PSA = 9.1, 13.73	NA	5 mm	0.5–12 mm	2.286 mm	2 mm
2006/Chao [17]	371	Prostate ADC/ PSA >10, bGs >7	NA	5 mm	0.05– 7.0 mm	2.4 mm	2.4 mm
2006/Chao [17]	371	Prostate ADC/PSA <10, bGs <6	NA	2–3 mm	0.05–5.0 mm	1.6 mm	NA
2007/Schwartz [24]	404	Prostate/extraprostatic disease	NA	5 mm	0.0–5.7 mm	0.9 mm	0.6 mm
1985/Holland [45]	406	Breast/tumour size <4 cm	NA	30 mm/10–20 mm from TB	0–10 cm	NA	NA
1990/Holland [52]	50	Breast/tumour size <5 cm/DCIS comedo	NA	16% more than 2 cm	NA	NA	NA
1990/Holland [52]	32	Breast/tumour size <5 cm/DCIS micropapillary	NA	47% more than 2 cm	NA	NA	NA
1995/Ohtake [53]	20	Breast/DCIS tumour size <2.9 cm	NA	NA	0–28 mm	11.9 mm	6 mm
2000/Imamura [54]	253	Breast/DCIS	NA	NA	0–55 mm	NA	9 mm

(Continued)

Supplementary Appendix Table I. (Continued).

Year/Author	# patients	Organ site/original diagnosis	Conventional margin of CTV	Proposed margin of CTV	Range of ME	Mean of ME	Median of ME
2004/Vicini [59]	121	Breast/invasive carcinoma only	NA	10 mm from TB	1–20 mm	6.4 mm	5 mm
2004/Vicini [59]	166	Breast/DCIS only	NA	10 mm from TB	1–29 mm	8.1 mm	7 mm
2004/Vicini [59]	214	Breast/invasion or DCIS	NA	10 mm from TB	1–29 mm	7.9 mm	6 mm
2009/Stroom [62]	10	Breast/tumour size <3 cm	1.5 cm	NA	0.3–2.5 cm	1.0 cm	NA
2006/Apisarnthanarax [66]	48	Head and neck/lymph node size <3 cm	5 mm–2 cm	1 cm	0.4–9 mm	2.2 mm	1.6 mm
1999/Hoffman [73]	24	Vulva/SCC	NA	NG	1.1–28 mm	9.1 mm	NA
2005/Choo [74]	14	Skin/SCC	4 mm	10 mm	2–10 mm	5.7 mm	NA
2005/Choo [74]	57	Skin/basal cell carcinoma (BCC)	4 mm	10 mm	1–15 mm	5.2 mm	NA
2009/Jenkins [70]	35	Bladder/with EVE on CT image	1.5–2 cm (ME + set up)	10 mm	0–16 mm	4.4 mm	4 mm
2009/Jenkins [70]	45	Bladder/without EVE on CT image	1.5–2 cm (ME + set up)	6 mm	0–12 mm	2.1 mm	1 mm
2009/Fennimore [75]	30	Ovarian cancer	NA	2 cm (surgical margin)	0.2–1.4 cm	0.53 cm	0.3 cm
2010/Wang [72]	149	Hepatocellular carcinoma	1–1.5 cm	4 mm	0.5–4 mm	NA	NA
2010/Wang [71]	6	Hepatocellular carcinoma/grade 1	1–1.5 cm	0.2 mm	0–0.2 mm	0.1 mm	0 mm
2010/Wang [71]	43	Hepatocellular carcinoma/grade 2	1–1.5 cm	4.5 mm	0–4.5 mm	0.9 mm	0.80 mm
2010/Wang [71]	27	Hepatocellular carcinoma/grade 3	1–1.5 cm	8 mm	0–8 mm	1.9 mm	1.5 mm

ADC: adenocarcinoma; bGs: biopsy Gleason score; DCIS: intraductal carcinoma in situ; EVE: extra-vascular extension; ME: microscopic extension; NA: not applicable; NSCLC: non-small cell lung carcinoma; PSA: prostate-specific antigen; SCC: squamous cell carcinoma; SCLC: small cell lung carcinoma; TB: tumour bed.