

Evaluation of deformed image-based dose calculations for adaptive radiotherapy of nasopharyngeal carcinoma

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Published version

POON, Miranda, HOLBORN, Catherine, CHENG, Ka Fai, FUNG, Winky Wing Ki and CHIU, George (2017). Evaluation of deformed image-based dose calculations for adaptive radiotherapy of nasopharyngeal carcinoma. *Medical dosimetry : official journal of the American Association of Medical Dosimetrists*.

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Target volume /OARs	Dose level	Significantly different? (P<0.05)	p value	Greatest % difference	Mean % difference \pm SD
NP-GTV	D ₉₈	no	0.0657	-0.57%	0.03% \pm 0.21
	D ₉₅	no	0.2272	0.46%	0.03% \pm 0.17
	D ₅₀	no	0.0766	-0.40%	0.04% \pm 0.16
	D ₅	yes	0.0002	0.97%	0.15% \pm 0.24
	D ₂	yes	0.0001	1.13%	0.18% \pm 0.29
NP-CTV	D ₉₈	yes	0.0164	0.53%	0.07% \pm 0.19
	D ₉₅	yes	0.0164	-0.38%	0.06% \pm 0.15
	D ₅₀	no	0.1388	-0.41%	0.03% \pm 0.14
	D ₅	yes	0.0003	0.80%	0.13% \pm 0.21
	D ₂	yes	0.0002	1.13%	0.17% \pm 0.28
NP-PTV	D ₉₈	yes	0.0001	0.64%	0.15% \pm 0.21
	D ₉₅	yes	0.0012	-0.37%	0.09% \pm 0.17
	D ₅₀	yes	0.0076	-0.47%	0.04% \pm 0.13
	D ₅	yes	0.0024	0.57%	0.10% \pm 0.18
	D ₂	yes	0.0003	1.10%	0.16% \pm 0.26
Spinal cord	D _{max}	yes	0.0043	-3.95%	-0.61% \pm 1.14
	D ₁₀	no	0.1960	0.95%	0.12% \pm 0.44
	D ₅₀	yes	0.0028	56.70%	3.70% \pm 10.56
	D _{mean}	yes	0.0024	18.97%	2.79% \pm 5.00
Left optic nerve	D _{max}	yes	<0.0001	-26.51%	-4.57% \pm 5.77
	D ₁₀	yes	<0.0001	-17.06%	-3.52% \pm 3.66
	D ₅₀	yes	<0.0001	-6.52%	-1.77% \pm 1.85
	D _{mean}	yes	<0.0001	-11.09%	-2.19% \pm 2.58
Right optic nerve	D _{max}	yes	<0.0001	-7.57%	-3.05% \pm 2.42
	D ₁₀	yes	<0.0001	-15.07%	-4.13% \pm 3.98
	D ₅₀	yes	<0.0001	-5.46%	-1.61% \pm 1.65
	D _{mean}	yes	<0.0001	-8.89%	-2.26% \pm 2.10

Table 1

Patient	Spinal cord				Left optic nerve			
	D _{max}	D _{10%}	D _{50%}	D _{mean}	D _{max}	D _{10%}	D _{50%}	D _{mean}
1	-	0	-	-	-	-	-	-
2	+	+	+	+	-	-	0	-
3	-	-	+	+	-	-	-	-
4	-	+	+	+	-	-	-	-
5	-	+	+	+	-	-	-	-
6	-	0	0	0	-	-	-	-
7	-	-	+	+	-	-	0	-
8	+	0	+	+	0	-	-	-
9	-	-	+	+	-	-	+	+
10	-	-	-	-	-	-	-	-
11	0	+	+	+	-	-	0	-
12	-	-	-	-	-	-	-	-
13	-	+	+	+	-	0	+	+
14	+	+	0	+	-	-	-	-
15	-	+	+	+	-	-	-	-
16	-	-	0	+	-	-	0	0
17	-	0	-	-	+	-	-	-
18	-	+	+	+	-	-	-	-
19	-	-	0	-	-	-	-	-
20	-	-	+	+	-	-	-	-
21	-	-	-	-	-	-	-	-
22	+	+	-	0	+	-	-	-
23	-	+	+	+	-	-	-	-
24	-	+	+	+	-	-	-	-
25	-	0	0	-	-	-	-	-
26	+	+	+	+	-	-	-	-
27	-	+	+	+	-	-	-	-
28	-	-	+	-	-	-	-	-
29	+	-	+	0	-	-	-	-
30	-	+	+	+	-	-	-	-

Table 2