English Translation of JASTRO treatment policy of proton beam therapy. Ver 1.0 at 2016 May (https://www.jastro.or.jp/particle_beam/detail.php?eid=00002)
This treatment policy can be changed at any time without notice.

Disease	Radiotherapy	*Ref.*
Brain and spinal cord tumors		
Glioma	Low grade: 54GyE/30 fractions High grade: 60GyE/30 fractions	*1-4*
Glioblastoma	60GyE/30 fractions (a part may be combined with X-ray therapy) 96.6GyE/56 fractions (2 fraction/day, edema region 50.4GyE/28 fractions)	*5-7*
Germ cell tumors	Local total dose 50.4-61.2GyE/28-34 fractions (Determine field of radiation from tumor site with or without spreadin Combination with whole ventricular irradiation, whole brain irradiation, or craniospinal irradiation 23.4GyE/13 fracti	*8-11*
Meningioma	Benign (Difficult to perform surgical resection): 54GyE/30 fractions Atypical, Anaplastic: 66.6GyE/28 fractions	*12-16*
Pituitary adenomas *Unresectable or postoperative remnants of recurring tumors*	54GyE/30 fractions	*17-18*
Craniopharyngioma *Unresectable or postoperative remnants of recurring tumors*	54GyE/30 fractions	*19-22*
Medulloblastoma	50-59.4GyE/25-33 fractions (craniospinal irradiation and local radiation)	*23-25*
Ependymoma **Ac**	Low grade: 50.4GyE/28 fractions Anaplastic: 60GyE/30 fractions	*26-30*
Children (3 years or older):	Low grade: 50.4GyE/28 fractions Anaplastic: 59.4GyE/33 fractions	
Children (under 3 years of age):	Low grade: 50.4GyE/28 fractions Anaplastic: 54GyE/30 fractions	
Atypical teratoid/rhabdoid tumor		*25,31*
Children (3 years or older):	54GyE/30 fractions (Craniospinal irradiation or local radiation: 36GyE/20 fractions + local irradiation 18GyE/10 fractions)	
Children (under 3 years of age):	54GyE/28 fractions (Craniospinal irradiation or local radiation: 23.4GyE/13 fractions + local irradiation 27GyE/15 fractions)	
Primitive neuroectodermal tumor	Local total dose: 55.8GyE/31 fractions (Craniospinal irradiation or local radiation: 36GyE/20 fractions + local irradiation 19.8GyE/11 fractions) 45GyE for spinal cord metastasis 50.4GyE for cauda equine	*23-25, 32*
Other brain tumors	Decide on treatment plans, the irradiation methods, doses, and number of fractions through case evaluation at the cancer committee with several specialists (evaluation based on age, tumor pathology, and location)	*5,26,33*

Disease	Radiotherapy	*Ref.*
Head and Neck tumors		
Squamous cell carcinoma of the nasal cavity and paranasal sinus *In cases where low doses irradiated to organs at risk cannot be ensured during X-ray radiotherapy*	Radical irradiation: 70-74GyE/35-37 fractions (standard fractionation)[a] 70.2Gy/26 fractions (reduced fractionation)[a] Postoperative irradiation: 66GyE/33 fractions[a]	*34-39*
Squamous cell carcinoma of the head and neck *In cases where low doses irradiated to organs at risk cannot be ensured during X-ray radiotherapy*	Radical irradiation: 70-74GyE/35-37 fractions[a] Postoperative irradiation: 66GyE/33 fractions[a] Re-irradiation: 60GyE/30 fractions	*40-41*
Malignant melanoma of the head and neck *Unresectable or incomplete resection*	Radical irradiation: 60-60.8GyE/15-16 fractions[b] Postoperative irradiation: 30GyE/5 fractions[b]	*34,42-43*
Olfactory neuroblastoma *Unresectable or incomplete resection*	Radical irradiation: 65-70.2GyE/26-32 fractions Postoperative irradiation: 66-70GyE/33-35 fractions	*34,35,39, 44,45*
Adenoid cystic carcinoma *Unresectable or incomplete resection*	Radical irradiation: 65-70.2GyE/26 fractions 70.4-74.8GyE/32-34 fractions Postoperative irradiation: 66-70GyE/33-35 fractions	*34,45-46*
Advanced malignant salivary gland tumor *Lymph node metastasis, history of postoperative*	Radical irradiation: 65-70.2GyE/26 fractions Postoperative irradiation: X-ray therapy with proton beam boost to 66-70GyE/33-35 fractions	*45-46*
Non-squamous cell carcinoma of the head and nec	Radical irradiation: 65-70.2GyE/26 fractions 70.4-74.8GyE/32-34 fractions Postoperative irradiation: 66-70GyE/33-35 fractions	*35-36,45*

[a]combination with photons for prophylactic irradiation possible

[b]1 fraction/day, on every other day (3 times/week)

Disease	Radiotherapy	*Ref.*
Lung and mediastinal tumors		
Stage I and cT2b-3N0 lung cancers *Unresectable or inoperable cases*	Peripheral cT1-T2aN0: 66-70GyE/10 fractions[c]	*47-50*
	Peripheral cT2b-T3N0: 66-70GyE/10 fractions[c] 80GyE/20 fractions[c]	
	Central cT1a-T3N0: 80GyE/25 fractions[c] 72.6GyE/22 fractions[c]	
Stage II and III non-small cell lung cancer	60-66Gy/30-33 fractions 70-74Gy/35-37 fractions	*51-53*
Mediastinal tumor	60-66Gy/30-33 fractions 70-74Gy/35-37 fractions	*29, 54-56*
Gastrointestinal (GI) tumors		
Stage I to III primary esophagus cancer	60-70GyE/30-35 fractions (combined with photon therapy of 36-40Gy/20 fractions with elective field irradiation)	*57-61*
Locally recurrent rectal cancer *Unresectable tumor*	Close to the GI tract: 60-70GyE/30-35 fractions Not close to the GI tract: 72-75GyE/18-25 fractions	*62-64*
Hepatobiliary tumors		
Hepatocellular cancer	Peripheral type: 66GyE/10 fractions Porta hepatica type: 72.6-76GyE/20-22 fractions Adjacent to the GI tract: 74-76GyE/37-38 fractions	*65-68*
Intrahepatic cholangiocarcinoma *Unresectable or recurrent tumors*	Porta hepatica type: 72.6-76GyE/20-22 fractions Adjacent to the digestive tract: 74-76GyE/37-38 fractions	*69-73*
Porta hepatic and extrahepatic cholangiocarcinom *Unresectable or recurrent tumors*	Porta hepatic area: 70.2-72.6GyE/22-26 fractions Adjacent to the GI tract: 50-60GyE/25-30 fractions	*70,74-75*
Locally advanced pancreatic cancer *Unresectable or recurrent tumors*	50-56GyE/25-28 fractions (standard fractionation) 59.4GyE/33 fractions (Careful prospective multi-insitutional study is warranted) 60-67.5GyE/20-25 fraction with simultaneous boosting (Careful prospective multi-insitutional study is warranted)	*76-79*

[c] 1 fraction/day, on successive days (5 times/week)

Disease	Radiotherapy	*Ref.*
Urological tumors		
Prostate cancer Stage T1c-T4N0M0	74-78GyE/37-39 fractions (standard fractionation) 69-70GyE/28-30 fractions (reduced fractionation) 60-66GyE/20-22 fractions (reduced fractionation)	*80-85*
Bladder cancer Stage II-III	Whole bladder irradiation 40-41.4Gy/20-23 fractions then add local irradiation: Close to the GI tract: 19.8-25.2GyE/10-14 fractions (Total dose: 59.8-66.6GyE/30-37 fractions) Not close to the GI tract: 33-36.6GyE/10-11 fractions (Total dose: 73-78GyE/30-34 fractions)	*86-89*
Renal cancer Stage T1-4N0M0, inoperable case	Ventral tumor: 76-79.2GyE/20-24 fractions 77GyE/35 fractions Posterior tumor: 66GyE/10 fractions	*90-93*
Testicular tumor *Irradiation to the para-aortic or affected common iliac artery area*	Stage I: 19.8-25.2GyE/10-14 fractions Stage IIA (lymph node diameter < 2 cm; N1): 28.8-30.6GyE/15-17 fractions Stage IIB (2 cm ≤ lymph node diameter <5 cm; N2): 36GyE/18-20 fractions	*94-95*
Gynecological tumors		
Locally advanced cervical cancer or endometrial cancer	59.4GyE/33 fractions (lymph node metastasis) 50.4GyE/28 fractions (elective regional lymph node)	*96-97*
Bone and soft tissue tumors		
Chordoma, Chondrosarcoma	Adjacent to critical organs: 63-70.4GyE/26-39 fractions Not adjacent to critical organs: 70.4GyE/16 fractions (4 times/week)	*98-106*
Osteosarcoma	Adjacent to critical organs: 70.2-70.4GyE/26-32 fractions Not adjacent to critical organs: 70.4GyE/16 fractions (4 times/week)	*99, 104, 106, 107*
Other rare bone and soft tissue tumors	Adjacent to critical organs: 65-80GyE/26-32 fractions (combination with X-ray therapy is acceptable) Not adjacent to critical organs: 70.4GyE/16 fractions (4 times/week)	*99, 104, 106, 108, 109*
Metastatic tumors		
Metastatic lung tumor *Oligometastatic (≤ 3 lesions)*	Peripheral: 64GyE/8 fractions Central: 72.6GyE/22 fractions	*110-111*
Metastatic liver tumor *Oligometastatic (≤ 3 lesions)*	Peripheral: 64GyE/8 fractions Central: 72.6GyE/22 fractions	*65, 112-114*
Metastatic lymph node *Oligometastatic*	Recurrent, refractory: 64GyE/8 fractions 72.6GyE/22 fractions Adjacent to critical organs: 50-70GyEGyE/25-35 fractions	*115*

Supplemental data 2

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