Study	Evaluation of the treatment-related toxicities of proton beam craniospinal radiotherapy (CSRT) in the patients with brain tumors
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Additional Info	
Institution	National Cancer Center Korea
Recruitment Status	Study Start Date:
	Estimated Primary Completion Date:
	Estimated Study Completion Date:
	Estimated Enrollment:
Study Purpose	
Primary Aims	To compare the treatment-related toxicities (bone marrow function, endocrinal function and gastro intestine function) between proton beam craniospinal radiotherapy (CSRT) and radiotherapy in the pediatric patients with brain tumors
Secondary Aims	
Methods	KSPNO(The Korean Society for Pediatric Neuro-Oncology protocols) –
	KSPNO-M051 : 23.4Gy/1.8Gy
	KSPNO-M081/S081 : 23.4Gy/1.8Gy, 30.6Gy/1.8Gy
	KSPNO-S082 : 23.4Gy/1.8Gy
	KSPNO-G081 : 19.5Gy/1.8Gy, 24.0Gy/1.8Gy
	KSPNO-G082 : 36.0Gy/1.8Gy, 39.0Gy/1.8Gy
Eligibility	Case – Brain tumor, such as medulloblastoma, blastocytoma, Atypical Rhabdoid Tumor, is needed craniospinal radiationtherapy or other solidity tumor with leptomeningeal disease is needed CSRT.
	Control - Patient undergo CSRT other than proton beam, or undergo radiation therapy in scull, spine, pelivec bone. Or expected hematologic toxicity during RT period due to more than 30% red marrow includes RT area.
Exclusion Criteria	1. Patients with blood cancer, such leukemia.