<table>
<thead>
<tr>
<th>Study Purpose</th>
<th>Evaluation of the treatment-related toxicities of proton beam craniospinal radiotherapy (CSRT) in the patients with brain tumors</th>
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<tbody>
<tr>
<td><strong>Principle Investigator</strong></td>
<td>Joo Young Kim, M.D.</td>
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</tbody>
</table>
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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** | 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, pelive 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. |