

# **CLINICAL TRIALS IN PARTICLE THERAPY**

**Bhadrasain Vikram**

Contact author to use slides

# Hypotheses

- **Particle therapy can improve survival in some kinds of cancer.**
- **Particle therapy can decrease adverse events in some kinds of cancer without decreasing tumor control.**

# Improving Survival

- **Prospective Randomized Trials:**
  - **Protons vs Photons**
    - Glioblastoma (NRG)
    - NSCLC (NRG)
    - Hepatocellular ca (MGH/MDACC)
    - Esophageal ca (MGH/MDACC)
  - **Carbon ions vs Photons**
    - Pancreatic ca (TBD)

# Decreasing Adverse Events

- **Prospective Randomized Trials:**
  - **Protons vs Photons:**
    - Low grade glioma (NRG)
    - Oropharyngeal ca (MDACC)
    - Nasopharyngeal ca (MGH)
    - Prostate ca (Non-NRG)
    - Post Mastectomy Breast ca (Non-NRG. PCORI)

# “Challenging” sites

- **Non-randomized trials:**
  - **Atypical Meningioma.**
  - **Retroperitoneal Sarcoma**
  - **Craniospinal irradiation**

# NCI workshop on Particle Biology

- **April 5-6, 2016. Near Washington DC.**
- **Goals:**
  - **To review current knowledge**
  - **Identify gaps in knowledge**
  - **Clinical consequences of those gaps**
  - **Identify research opportunities**

**vikramb@mail.nih.gov**

Contact author to use slides