Assessment of Emerging Technologies Used in Adjuvant Radiotherapy for Gastric Cancer: Preliminary Findings from the Quality Research in Radiation Oncology (QRRO) GI Committee Process Surveys

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Purpose/Objectives

- Radiation oncology practice for gastrointestinal (GI) malignancies has been evolving over the last decade due to rapid clinical adoption of sophisticated new technology for radiotherapy (RT) planning and delivery.
- The American College of Radiology (ACR), Quality Research in Radiation Oncology (QRRO), aims to evaluate quality of care of the radiation oncology community.
- Through process surveys, QRRO aims to track the distribution and utilization of advanced RT technology with the goal of assessing the appropriate use of these emerging technologies.

Study Design

Clinical Performance Measures

- The QRRO Gastrointestinal Cancers Committee defined a set of process measures based on national practice guidelines which can be used to measure performance:
  1. Use of CT-based simulation and treatment planning
  2. Use of dose volume histograms (DVH) to evaluate normal tissue doses to the kidneys and liver
  3. Completion of planned RT course within the prescribed time frame

- Emerging process of care measures were defined based on best available evidence and expert consensus:
  1. Use of Intensity Modulated Radiotherapy (IMRT) treatment delivery when 3D conformal technology is used in treatment planning
  2. Use of image-guided tools (IGRT), other than computed tomography scans, for radiation therapy target delineation
  3. Use of preoperative (neoadjuvant) radiotherapy

Results

- CPMs were computed on data for 250 eligible patients at 45 institutions.

Conclusions

- As radiation oncologists incorporate new technology and clinical guidelines into their practice, reassessment of quality of care is necessary to inform practitioners of their professional performance.
  - Findings from the QRRO emerging CPMs indicate widespread adoption of CT-based planning and use of DVH’s to evaluate normal tissue doses and to limit the doses to surrounding organs based on the known radiation tolerance doses of these organs.
  - Other image-guided techniques had not been routinely incorporated into practice during the 2005-2007 time period.
  - QRRO’s Survey Data will provide national benchmark data for future QRRO surveys of emerging technologies.

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