Opportunities for Medical Physics Advocacy and Equity in Clinical Trials

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Disclosures

Grant funding from the National Cancer Institute

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Overview

• Proton therapy case studies of health disparities in clinical trials
• Other case studies
• How can Medical Physicists help prevent/reduce health disparities?
My background
Catch-22 of Clinical Trials

• Health insurers want evidence that a treatment is effective,
• BUT we can’t get those data without insured patients participating on trials
• This has been particularly shown in proton therapy trials
• This push and pull creates health inequities in trials
Proton Therapy Disparities

• Analysis of 903 thoracic and H&N patients that underwent insurance approval process for proton therapy between 2013-2016

• Medicare patients are much more likely to get approved for proton treatment than patients with private insurance

• This can skew proton clinical trial data to older patients who can get Medicare coverage to participate in trials
  • Need to control for average age of patients when comparing photon vs. proton outcomes data
Proton Therapy Disparities

• “Approval rates by Medicare (n = 538) and private insurance (n = 365) were 91% and 30% on initial request, at a median 3 days and 14 days from inquiry to determination.”

• Medicare patients are receiving treatment faster than patients with private insurance – could also have an impact on treatment outcomes
Proton Therapy Disparities

• Many patients denied approval will end up self-paying

• This exacerbates disparities between those who are able to self-pay and those who cannot
Proton Therapy Disparities

- Analysis of 1240 COG patients treated between 2010-2018
- MDs were allowed to chose RT modality (photon or proton)
Proton Therapy Disparities

Univariate analysis showed lower proton therapy treatment rates for Black pediatric patients (OR, 0.35; 95% CI, 0.17-0.72; P = .004)

Pediatric patients traveled farther to receive proton therapy than conventional therapy highlighting geographical access disparities that could be addressed with proton units being installed in more geographic locations.
Proton Therapy Disparities

• Follow up in progress – COG surveying MDs, midlevel providers to see if proton therapy referral patterns are influenced by race, language, socio-economic status, etc.
Prostate Therapy Disparities

• Review paper of 32 prostate therapy studies
• Black, Hispanic, & Asian men less likely to receive proton therapy for prostate treatment
• Lower income men less likely to receive proton therapy or SBRT
Prostate Therapy Disparities

• Black men statistically less likely to receive curative or dose-escalated RT

• “Sociodemographic disparities and inequities in RT for prostate cancer persist. Robust efforts are imperative to eliminate disparities to improve outcomes for all patients with prostate cancer.”
Other Radiation Oncology Examples

• Survey of Rad Oncs who had treated breast cancer within the previous 6 months
• DIBH underutilized for non-English speaking breast patients, despite dosimetric benefits for heart sparing
Other Radiation Oncology Examples

• Why do I mention this study? Check out one of the authors
So, what can Medical Physicists do?

Data analysis to find disparities in treatment cohorts

Speak up in clinical peer review setting – is a patient eligible for a more advanced treatment?
So, what can Medical Physicists do?

Provide data to prove superiority of treatment to insurance providers

Follow template of medical physics patient consults – new area for physicists to provide service (MP 3.0)
MedPhys 3.0

https://mp30.aapm.org/

Goal of MP3.0

“Every patient’s care can be improved by a medical physicist and every clinic should have a medical physicist.”
What can Medical Physicists do?

• Work with DEI efforts to increase diverse representation in clinical teams

• Patient outcomes, like infant mortality, have been correlated with race of clinical providers
What can Medical Physicists do?

• Get involved with clinical trial development – every NCTN trial with radiation therapy has a medical physics PI

• Diversity of folks designing the trial can have a positive impact on the trial participants and outcomes
Clinical Trials

Most NCI protocols have Medical Physics co-PIs
NRG-GY026 enrollment of racial and ethnic minorities:

- Black women disproportionately suffer and die from endometrial cancer (Clarek, 2019; Doll, 2019)
  - Disproportionate incidence of high risk histology
  - Other biologic and non-biologic (care related) factors
- Black women are under-represented in clinical trials, enrollment of Black women in endometrial trials is lower than expected (Scalici et al, 2015)
- Progress cannot be made in the treatment of endometrial cancer without trials that represent all women at risk.
- High enrollment of Black women is imperative
Clinical Trial Health Equity Committees

Health Disparities Committee (HDC) (Special Populations)

Chair

Chanita Hughes-Halbert, PhD
Jennifer Wenzel, PhD, MS, RN
What can Medical Physicists do?

• AAPM International and Affinity Groups could collaborate with NCI’s clinical trial groups to make more resources available in other languages, such as Quality of Life (QOL) surveys for patient follow up on trials
Other Medical Physics Clinical Trial Committees

All NCTN Groups have a Medical Physics committee (COG, NRG, Alliance, SWOG, ECOG-ACRIN)

• Special Committees on Proton Therapy in Clinical Trials, other advanced technologies

AAPM Work Group on Clinical Trials
Call to Action

Medical Physicists CAN have a meaningful impact on health equity in Medical Imaging and Radiation Oncology

Reflect on what you can do to improve access and outcomes for our patients

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