

CTRad UK strategy for internal mammary chain (IMC) radiotherapy research, 14 December 2016: summary of meeting

Objectives:

1. Build on existing collaborative approach to breast radiotherapy (RT) trials
2. Prioritise IMC RT photon research proposals
3. Identify/develop 1 proton study (UK only/international collaboration) to take forward

1. Build on existing collaborative approach to breast RT trials

This was achieved with 32 invited speakers/delegates across the UK including the 2 UK NHS proton centres, representing the following multidisciplinary groups:

- Research active clinical oncologists with a special interest in breast RT trials
- Trialists and methodologists
- Physicists with expertise in complex breast RT and photons
- Patient advocates with expertise in breast cancer and RT trials

ACTIONS: Members of the group to continue to work together both inside and outside further meetings (Carolyn Chan to facilitate by circulating email addresses)

2. Prioritise IMC RT photon research proposals

It was agreed that the Heartspare Plus should be supported and taken forward as a national research initiative. It was also agreed that Tailor RT (Canadian RCT) could not be taken forward in the UK for the following reasons:

- There was considerable overlap with the UK POSNOC trial, which is not due to complete recruitment for several years
- This group of patients are not routinely treated with IMC RT in the UK

ACTIONS: Await result of Heartspare Plus funding application to RfPB; Charlotte Coles (CEC) to feedback to Tim Whelan (CI of Tailor RT)

3. Identify/develop 1 proton study (UK only/international collaboration) to take forward

It was agreed that the US proton versus photon IMC RT trial could not be supported in the UK for the following reasons:

- The primary endpoint was considered underpowered for UK patients: the estimated difference was largely due to the much lower rates of cardiovascular deaths (EU data, 2010) compared with the US (SEER data, 1990's). The estimated sample size based on UK data was closer to 10,000
- There was concern that the control photon arm did not have tight dosimetric constraints, e.g. mean heart dose of <15Gy was permissible and breath-hold and/or arc-based IMRT were not mandatory

It was agreed that a UK breast IMC proton study should be developed within this group. The 2 options were:

- Non-randomised feasibility study incorporating evaluation of cardiac biomarkers
 - Simpler, but less added value
- Randomised phase II photons versus protons trial
 - Need to develop cardiac biomarkers (in photon trials), but added value:
 - Test feasibility of willingness for randomisation & patient travel
 - Direct photon vs proton more likely to influence future practice & give health economic data

ACTIONS: CEC to facilitate follow on meeting to develop UK breast IMC proton proposal in the New Year & feedback to Justin Bekelman (CI for US RCT); proton centres to develop photon vs proton plans in conjunctions with non-proton centres.

**National Cancer Research Institute
Clinical and Translational Radiotherapy Research Working Group
CTRAd UK strategy for internal mammary chain (IMC) radiotherapy research**

**Wednesday 14 December 2016
The Blue Hall, Lift Islington, 45 White Lion Street, London N1 9PW
09:45-16:00
Agenda**

Chairs of meeting: Charlotte Coles and John Yarnold

09:15	Registration and refreshments	
1.	Setting the scene	
09:45	Welcome and aims of the day	Charlotte Coles <i>Co-Chair Workstream 3, CTRAd</i>
09:50	CTRAd Proton Research Strategy (10 mins)	David Sebag-Montefiore <i>Deputy Chair, CTRAd</i>
10:00	Benefits of IMC radiotherapy (RT) (10 mins)	Carolyn Taylor <i>EBCTCG, Oxford</i>
10:10	Risks of IMC RT (10 mins)	Carolyn Taylor <i>EBCTCG, Oxford</i>
10:20	The need for implementing IMC irradiation in the UK; results of the RCR Breast RT Consensus meeting (10mins)	David Bloomfield <i>Professional Practice, RCR</i>
10:30	Background to UK proton service (10 mins)	Ranald Mackay <i>The Christie Hospital NHS Trust</i>
	Challenges for IMC RT research:	
10:40	Treatment of patients outside their local RT centre (10 mins)	Mairead Mackenzie <i>Independent Cancer Patients' Voice</i>
10:50	"Red lines" in trials methodology for IMC RT studies (10 mins)	Judith Bliss <i>Institute of Cancer Research</i>
11:00	Questions for speakers (15 mins)	
11:15	Break	

2.	IMC RT Research proposals	
11:30	HeartSpare Plus study (photons) (20 mins)	Anna Kirby <i>RMH</i>
11:50	Canadian (photons) and US studies (protons) (20 mins)	Charlotte Coles <i>Co-Chair Workstream 3, CTRad</i>
12:10	MRI biomarkers (15 mins)	Vanessa Ferreira / David Cutter <i>Oxford</i>
12.25	UK IMC study (protons) (15 mins)	Katherine Vallis <i>Oxford</i>
12:40	Which studies should be supported as part of the UK breast IMC RT research strategy? (20 mins) <ul style="list-style-type: none"> • HeartSpare Plus photon study • Canadian photon study • US proton study • UK IMC proton study 	Group session chaired by Charlotte Coles and John Yarnold
13:00	Networking lunch	
3.	Refining the proton studies	
13:45	US study (if supported) <ul style="list-style-type: none"> ○ UK requirements, e.g. dose/fractionation, contouring guidelines ○ UK sub-studies for added value ○ Effective framework to ensure collaborative working ○ Funding UK study (if supported) <ul style="list-style-type: none"> ○ Endpoints ○ Sample size ○ Effective framework to ensure collaborative working ○ Funding 	Group session chaired by Charlotte Coles and John Yarnold
15:00	Break	
4.	Action plan for UK strategy IMC RT research	
15:15	Action plan for next steps	Group session chaired by Charlotte Coles and John Yarnold
16:00	Meeting close	