Audit of Concurrent Chemo-Radiation: EBRT and HDR Brachytherapy in Locally Advanced Carcinoma of the Cervix

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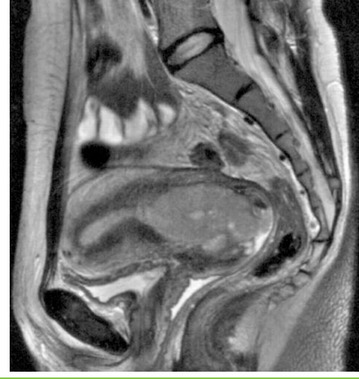

Introduction

Aim:

To evaluate patient outcome following treatment with chemo-radiotherapy combined with HDR brachytherapy using 2-d planning

Objectives:

- To compare local toxicity, recurrence rates and survival with national and international outcomes.
- To consider implications for future developments in treatment delivery

Background

- External beam pelvic radiotherapy with concurrent chemotherapy (CRT) followed by brachytherapy (BT) is internationally accepted as standard treatment for locally advanced cervical cancer [1, 2].
- RCR Guidelines recommend introduction of image guided brachytherapy (IGBT) with dose escalation (3)
- Brachytherapy doses in UK traditionally lower than in Europe / N America
- RD&E has been using HDR brachytherapy for twenty years (2-d planning) now introducing IGBT
- Need to establish current outcomes in order to evaluate need for change and effects of change

Standard (see table 2): RCR UK Audit (4):

Target: Outcome as RCR audit (overall survival better than 44%) RT alone group and within 1 SE of CRT group: 53.4-58.6%

Also to compare with: Vienna (5) and Toronto (6) Outcomes

Protocol

- EBRT: 50.45 Gy 28 # to whole pelvis

+/-5.4 Gy 3# pelvic side wall boost (parametria or lymphadenopathy)

- HDR: 2-d planning 15Gy in 2# prescribed to point 'A'

Tandem and Ovoids

- Chemotherapy: Concurrent Cisplatin 40mgs / m^2 (max70mgs) weekly x 5

Methods

Retrospective Review

- All patients treated with chemo-radiotherapy for locally advanced carcinoma of the cervix at RD&E 1st Jan 2000 – 31st Dec 2005
- Exclusion Criteria: No follow up
- Data collected: Demographics, Radiotherapy EBRT & BT details, chemotherapy, toxicity (scored using CTCAE v 3.0),
- Date and Site of first recurrence, disease free survival.

Results: Patient & Tumour Charactersitics

N = 64 sequential patients **EVALUABLE = 54** 10 excluded (no follow up data)

- **Median age**: 54yrs (range 24-84)
- **Histology**: SCC 77% Adenoca 13% Adenosq 10%
- **FIGO Stage**: IB 1 / IIA 7 IIB 31 IIIA 3 / IIIB 11 IV 1
- **Median Tumour diameter**: 6cm (range 2-10cm)
- **Nodal Involvement**: none: 61%, pelvis: 24%, pelvis & PA: 5% Unknown 10%

Results: Outcome

N=54

Recurrence:
24 (44%)

Overall Survival
OS: 44%

Disease Specific Survival
DSS: 55%

Toxicity (Grade 3 / 4)
6 (11%)

Table 1: Site of Recurrence

Site of Recurrence	Number (%)
Central (exenterable) alone	1 (2%)
Other Pelvic (in field) alone	1 (2%)
Para-aortic nodes alone	2 (4%)
Distant alone	8 (15%)
Pelvic and Distant	12 (22%)
TOTAL	24 (44%)

Table 2: Comparison of Outcomes with Standards

	RD&E	RCR	Vienna	Toronto
N	64	472	145	122
OS	44%	56%, 44%	64%	70%
DSS	55%	59%, 54%	74%	
Pelvic Recurrence	26%	22%	10%	12%
Toxicity	11%	10%	5%	13%
Dose EQD2 pt 'A'	74Gy	70-75Gy	85-90Gy	85Gy
Planning	2-d	2-d	3-d	2-d

Conclusions

- Limitations of small numbers & loss of 10 patients.
- Results less good than the RCR audit CRT similar to RT alone group
- Need to improve
- Pelvic control and survival less than international outcomes using higher doses and IGBT
- Increased toxicity compared to Vienna series with IGBT

Action Plan

1. Use data to strengthen business case for introduction IGBT & dose escalation
2. CT planning EBRT to avoid geographical miss introduced as standard
3. Evaluate radiotherapy details and patient pathway
4. Evaluate use of concurrent chemotherapy
5. Collect data prospectively to enable re-audit in future

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