Optimising the design of your Prostate Brachytherapy service

Cathy Taylor
Clinical Oncology
The Christie
Manchester UK

Aim

To discuss the factors that influence the delivery of a high quality prostate brachytherapy service

Background

the ideal vs. the reality

In the challenging financial climate that prevails in the NHS this is a matter of making the most of the resources you have now as new funding will be scarce.

Service design *discussion points*

- Evidence base
- Patient referral pathways
- Infrastructure, resources and skill mix
- Work flow
- Training
- Patient support and follow up
- Quality assurance
- Outcome data

Clinical evidence base for prostate brachytherapy

- EUA guidelines on prostate cancer (2010) recommend

  … *"combined brachytherapy and EBRT for intermediate risk disease"*
- ESTRO/EAU/EORTC recommendations on permanent seed implantation for localised prostate cancer (2000) and AUA guideline for the management of clinically localized prostate cancer (2007) state …*"brachytherapy monotherapy can be considered in intermediate disease"*
- NCCN Clinical Practice Guidelines on Prostate Cancer (v.1.2010)

  …*"permanent brachytherapy as monotherapy is indicated for low risk cancers. For intermediate risk disease consider combining with EBRT ± ADT"*
- *NICE recommended*

Why brachytherapy?

from the clinical viewpoint

Prostate brachytherapy is a logical way of delivering real time image guided, dose escalated and highly conformal radiotherapy to selected groups of patients

- low risk prostate cancer

  LDR permanent seed implant with Iodine 125 seeds as monotherapy.

- intermediate and high risk localised prostate cancer

  single HDR boost in combination with external beam conformal radiotherapy and hormones

Why brachytherapy?

From the patient viewpoint

- Convenient
- Little discomfort
- Rapid resumption of normal activities
- High patient satisfaction
- Favourable disease free results
- Low long term toxicity

Patient Preference Study

BJUI
BJU INTERNATIONAL

Early prostate cancer – which treatment do men prefer and why?

Carmel N. Anandadas[1,2], Noel W. Clarke[1,2,3], Susan E. Davidson[1,2], Patrick H. O'Reilly[4], John P. Logue[1,2], Lynne Gilmore[5], Ric Swindell[5], Richard J. Brough[4], Guy D. Wemyss-Holden[6], Maurice W. Lau[1,2,3,7], Pradip M. Javle[8], Vijay A.C. Ramani[1,2,9], James P. Wylie[1,2], Gerald N. Collins[4], Stephen Brown[4] and Richard A. Cowan[1,2], On behalf of the North West Uro-oncology Group

Departments of [1]Clinical Oncology and [2]Surgery and [5]Medical Statistics, The Christie NHS Foundation Trust, [9]Department of Urology, University Hospital South Manchester NHS Foundation Trust, Manchester, [3]Department of Urology, Salford Royal NHS Foundation Trust, Salford, [4]Department of Urology, Stockport NHS Foundation Trust, Stockport, [6]Department of Urology, East Lancashire Hospitals NHS Trust, Blackburn, [7]Department of Urology, Wrightington, Wigan and Leigh NHS Foundation Trust, Lancashire, [8]Department of Urology, Mid Cheshire Hospitals NHS Foundation Trust, Cheshire, UK

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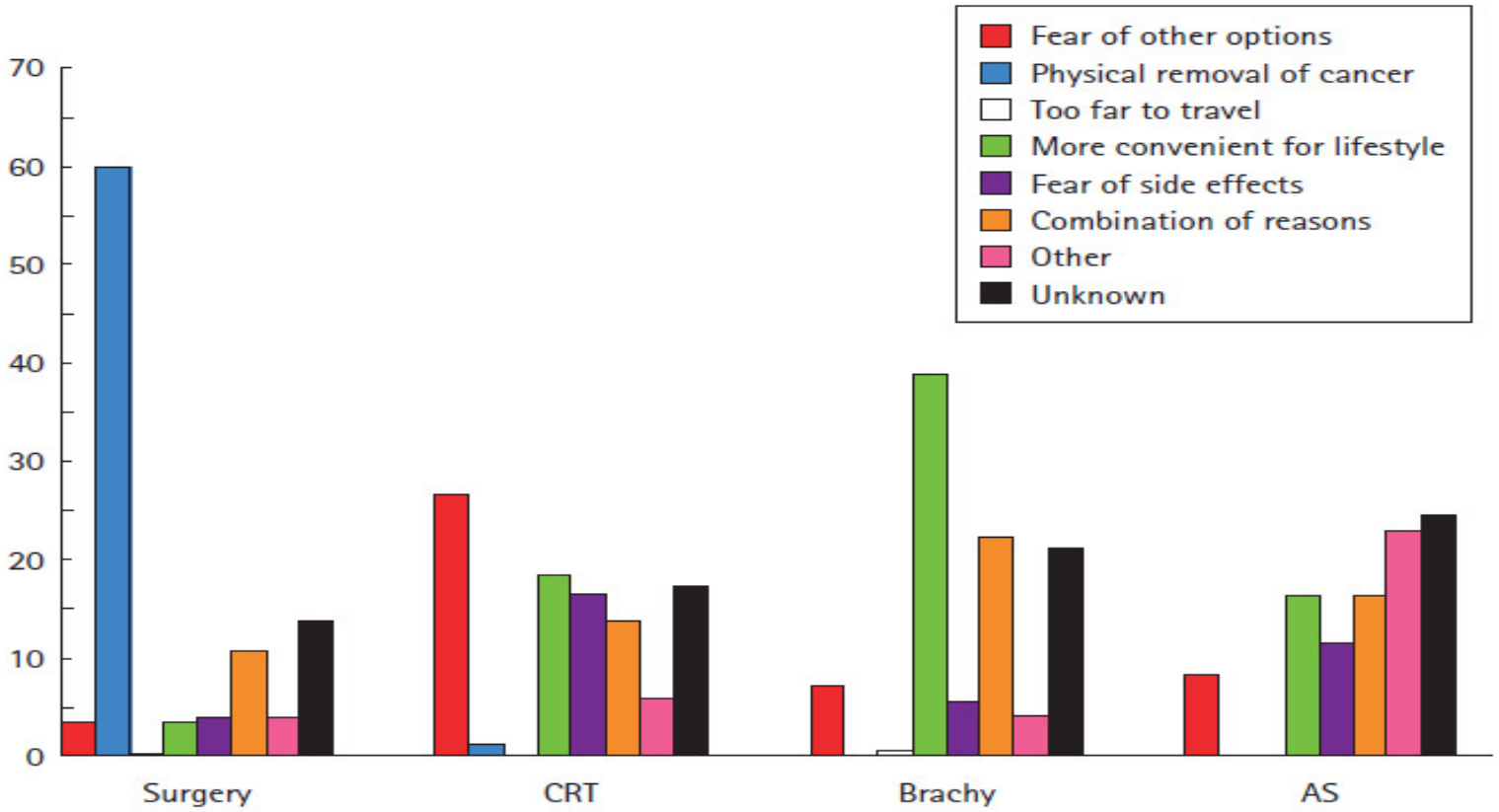
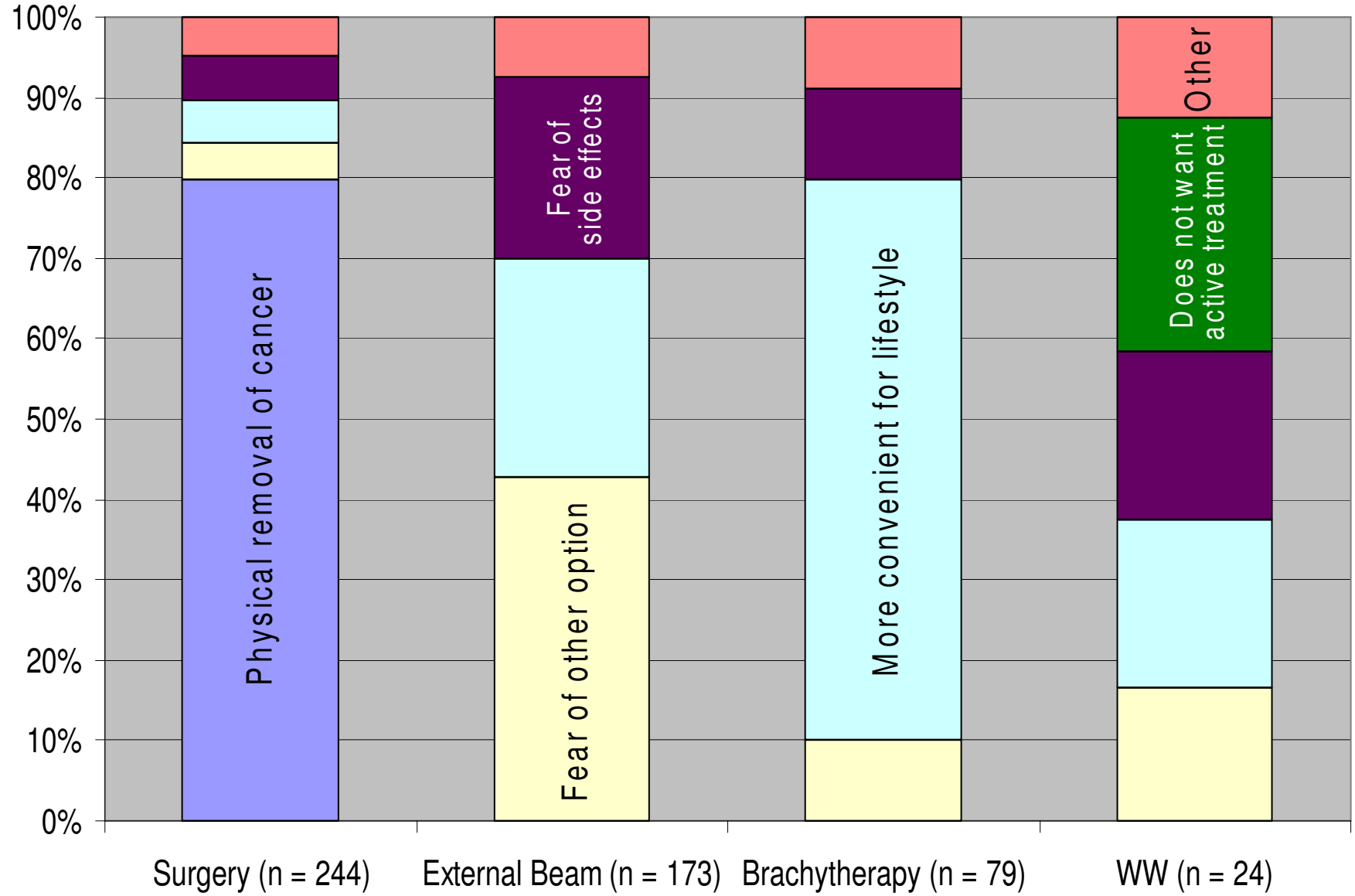
Why patients choose?





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NHS Foundation Trust

Patient referral pathways

- Multi-disciplinary team discussion for all patients
- Ensure all patients are counselled about the treatment options relevant to them, given a named key worker contact and appropriate written information
- Waiting list management and administrative efficiency – put robust systems in place
- Smooth booking process and co-ordination with other treatment modalities e.g. hormones + HDR + EBXRT

Infrastructure and resources

- Nationally

  much needed national tariff to reflect the true costs of prostate brachytherapy treatment is on the way

- Locally

  Patient Level Costing and Information Systems (PLICs)

  patient level costing is defined by the ability to measure the resources consumed by individual patient episodes. The PLICs system arrives at these costs which are then matched by the income attributed to that episode.

Infrastructure and resources…

- Theatre time: limited access to space may determine technique choice for example in

  LDR use of 1 or 2 step procedure

  HDR use of an ultrasound or CT based technique
- Consider context, for example is dose escalation also available using IMRT as an alternative to HDR brachytherapy?
- Establish accurate patient numbers for business case submissions and contracts with commissioners

Infrastructure and resources….

- What ward facilities are available e.g. day case or overnight?
- What equipment is available for imaging and planning, including not only the capital costs but also the revenue and planned replacement programme costs
- Staffing levels and skill mix – `who does what` and how do the team interact and cross-cover

Workflow

- Team work essential

  build a core team and establish good multidisciplinary team spirit and co-operation

- Map all key parts of the process and identify the individual responsible for each task e.g. performing WHO checklist with theatre staff

- Constantly re-evaluate and rationalise/streamline the process at key points in time e.g. after the learning curve

Workflow…

Develop a pre-op assessment clinic if possible

- medical clerking
- VTE [venous thrombo-embolic] risk assessment
- bloods
- swabs
- paperwork and consent forms

so on the day of the procedure there are few delays

Training

- Identify specific training needs with all individuals involved in the patient pathway
- Develop link nurse roles on the wards and appoint radiation protection supervisors as required by the IRR regulations
- Produce protocols for management of specific areas e.g. thromboprophylaxis, catheter management

Documented risks of prolonged surgical position

points to consider

- the small risk of DVT/PE due to prolonged knee flexion for 3-4 hours is countered by giving thromboprophylaxis with pre-op dalteparin 5000 units sub-cutaneously and use of Flowtron boots

- Hypothermia

  -use a Bair hugger warmer throughout

Compartment Syndrome

- Slight head down
- Keep patient well hydrated
- Flowtron boots

Patient support

- Named key worker for each patient, usually a specialist radiographer or urology nurse
- Share information with local support groups and the prostate cancer charities
- Establish close links with regional urology teams and specialist colleagues

Follow up

- Rising patient numbers mean we need to devise new ways of follow up
- Now:

  traditional out patient clinic attendance, increasingly radiographer or nurse led

  telephone and e mail clinic templates
- In future:

  we need to evaluate patient self reporting methods e.g. web based systems

Quality Assurance

- Clear guidelines needed, as discussed here today, for best practice
- Services will be subject to peer review
- Establish agreed competencies and numbers per unit and individual clinician as per RCR document

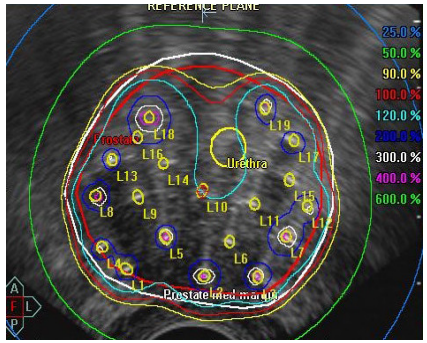
Prospective data collection

e.g.

the prospective postal data collection for HDR

Baseline, pre-HDR, 6 weeks, 6 months and 12 months post EBRT

- Demographics
- IPSS
- EPIC QoL
- LENT SOMA
- Catheter requirements
- Alpha blocker use



Good return rates

Outcome data

- Patient outcomes are a hot topic at present, as is the value of good data collection and long term PSA follow up, as illustrated by our previous speakers

- Development and sharing of databases is invaluable, as is the industry support for our data manager!

Outcome data…

- All the evidence so far supports the fact that careful selection of patients is the single biggest factor in ensuring favourable outcomes for our patients
- Best practice leads to better outcomes

- And finally…. good outcome and quality of life data provides the feedback loop to where we began…. with the evidence base for Prostate Brachytherapy

Thank you