

Prognostic factors in squamous cell anal cancers

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Introduction

- Squamous cell anal cancers is an uncommon malignancy of the lower GI tract
- Radical chemoradiation therapy used as first line treatment
- 5 year disease free survival around 70-80% have been reported for early tumours
- Research emphasis is on identifying prognostic factors that may impact on local disease recurrence and survival

Prognostic Factors: Current Evidence

**UK Anal Cancer Trial I, RTOG 98-11, EORTC Group Trials
US National Cancer Database, MD Anderson Study¹⁻⁵,**

- **Tumour size >5cm**
- **Node positive disease**
- Clinically palpable lymph nodes
- Male gender
- Black ethnicity
- Age over 65
- Poorly differentiated cancer
- Low pre-treatment haemoglobin
- Peri-anal skin ulceration
- HIV positive

1. Glynne-Jones R, Sebag-Montefiore D, Adams R, Gollins S, Harrison M, Meadows HM, Jitlal M. Prognostic factors for recurrence and survival in anal cancer: generating hypotheses from the mature outcomes of the first United Kingdom Coordinating Committee on Cancer Research Anal Cancer Trial (ACT I). *Cancer*. Feb 2013; 119(4): 748-55.

2. Bartelink H, Roelofsens F, Eschwege F, et al. Concomitant radiotherapy and chemotherapy is superior to radiotherapy alone in the treatment of locally advanced anal cancer: results of a phase III randomized trial of the European Organization for Research and Treatment of Cancer Radiotherapy and Gastrointestinal Cooperative Groups. *J Clin Oncol* 15:2040-9, 1997

3. Ajani JA, Winter KA, Gunderson LL, et al. Prognostic factors derived from a prospective database dictate clinical biology of anal cancer: the intergroup trial (RTOG 98-11). *Cancer*. 2010; 116: 4007-4013.

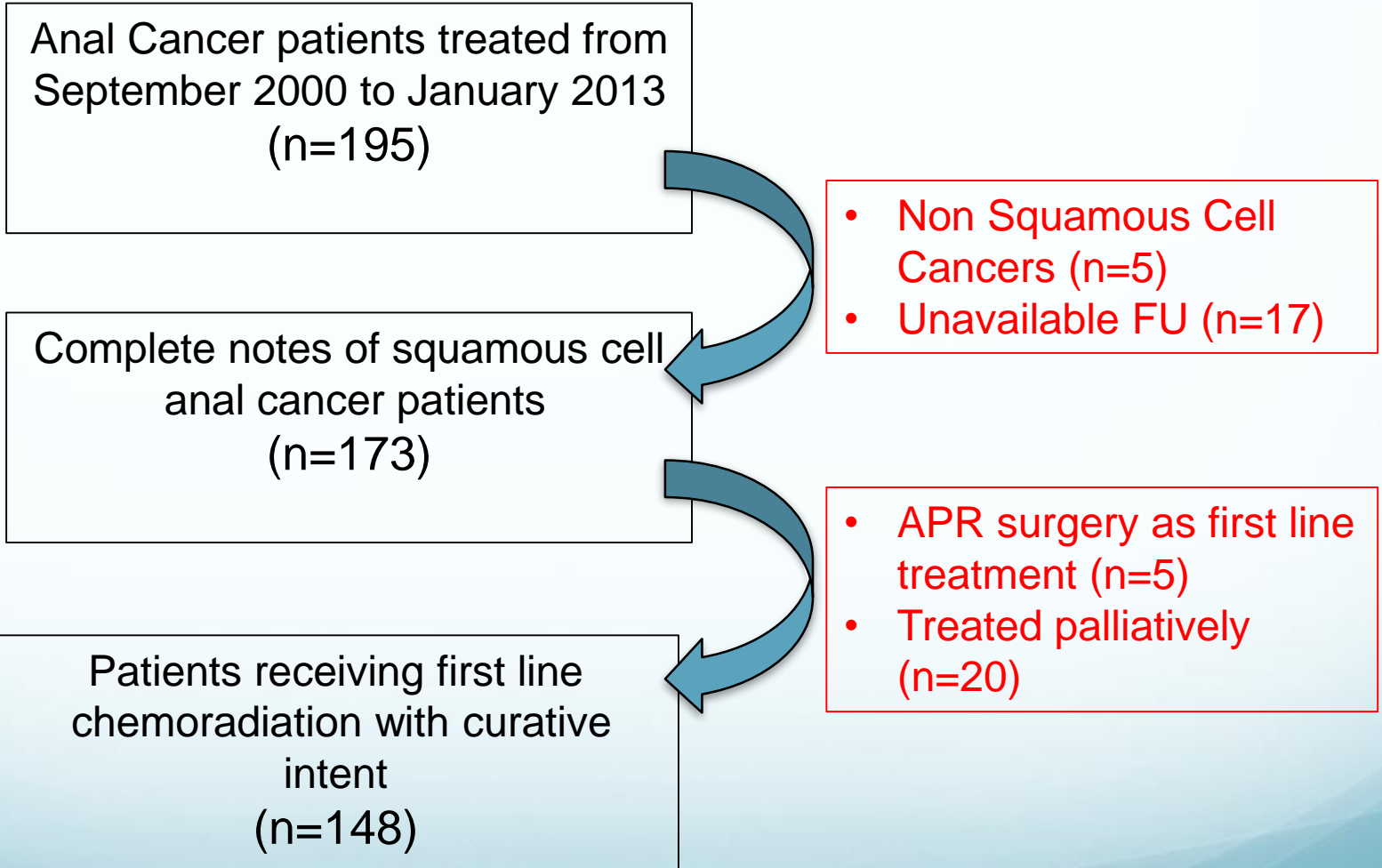
4. Bilimoria KY, Bentrem DJ, Rock CE et al. Outcomes and prognostic factors for squamous-cell carcinoma of the anal canal: analysis of patients from the National Cancer Data Base. *Dis Colon Rectum*. 2009; 52: 624-631.

5. Das P, Bhatia S, Eng C, et al. Predictors and patterns of recurrence after definitive chemoradiation for anal cancer. *Int J Radiat Oncol Biol Phys* 68:794-800, 2007

Aims

To evaluate prognostic factors for **local disease recurrence, distant metastases and cancer survival** from anal cancer patients treated with concurrent chemoradiation at the Rosemere Cancer Centre.

Materials and Methods

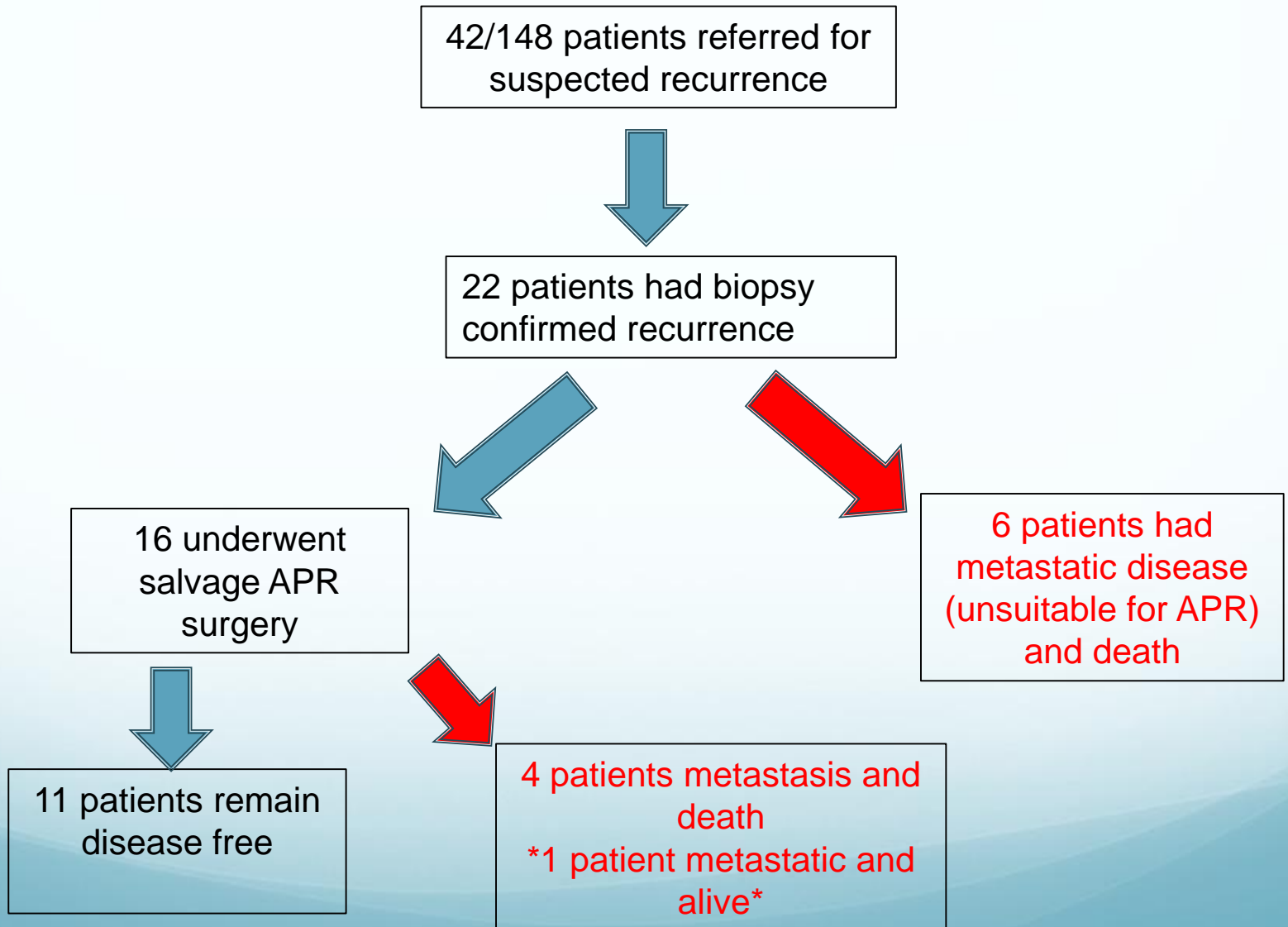


Study Sample

Patient Characteristics	n (%)
Gender	
Male	53 (36)
Female	95 (64)
Age	
<50	24 (16)
50-59	37 (25)
60-70	37 (25)
>70	50 (34)
Smoking	
Non-Smoker	91 (62)
Ex-Smoker	15 (10)
Smoker	42 (28)

Tumour characteristics	n (%)
Tumour Stage	
T1	21 (14)
T2	75 (51)
T3	29 (20)
T4	23 (15)
Nodal Stage	
N0	93 (63)
N1	23 (16)
N2	20 (13)
N3	12 (8)

Patients Receiving Salvage Surgery



Predictors of locoregional recurrence

Factor	Hazard Ratio	95% C. I	p value
Tumour size >5cm	4.52	1.88-10.87	0.001
Anal circumference involvement >2/3	4.62	1.76-12.11	0.002

Predictors of distant metastases

Factor	Hazard Ratio	95% C. I	p value
Tumour size >5cm	4.20	1.44-12.30	0.009
Anal circumference involvement >2/3	7.50	2.69-20.88	<0.001
Node positive disease	3.10	1.10-8.70	0.03
Pre-treatment haemoglobin <130g/l	3.12	1.10-9.13	0.04

Prognostic factors for cancer specific survival

Factor	Hazard Ratio	95% C. I	p value
Tumour size >5cm	2.89	1.28-6.52	0.01
Anal circumference involvement >2/3	3.28	1.35-7.98	0.01
Node positive disease	2.39	1.07-5.34	0.03
Pre-treatment haemoglobin <130g/l	2.32	1.20-5.35	0.04

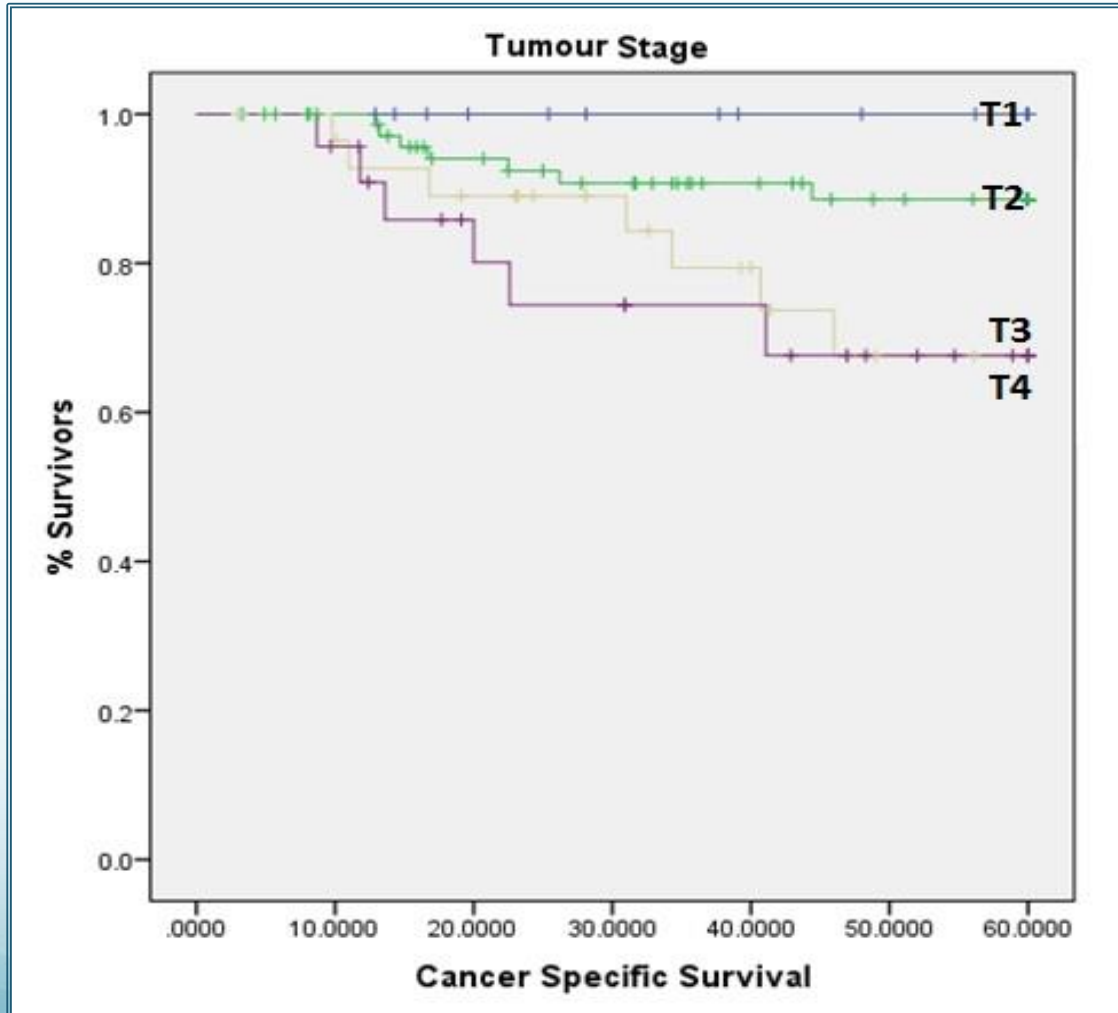
Insignificant predictive factors for recurrence, metastases and survival

- Male Gender
 - Age >65
 - Palpable Inguinal Lymph Nodes
 - Tumour location
-
- Ethnicity
 - HIV status
 - Skin ulceration

Survival Rates

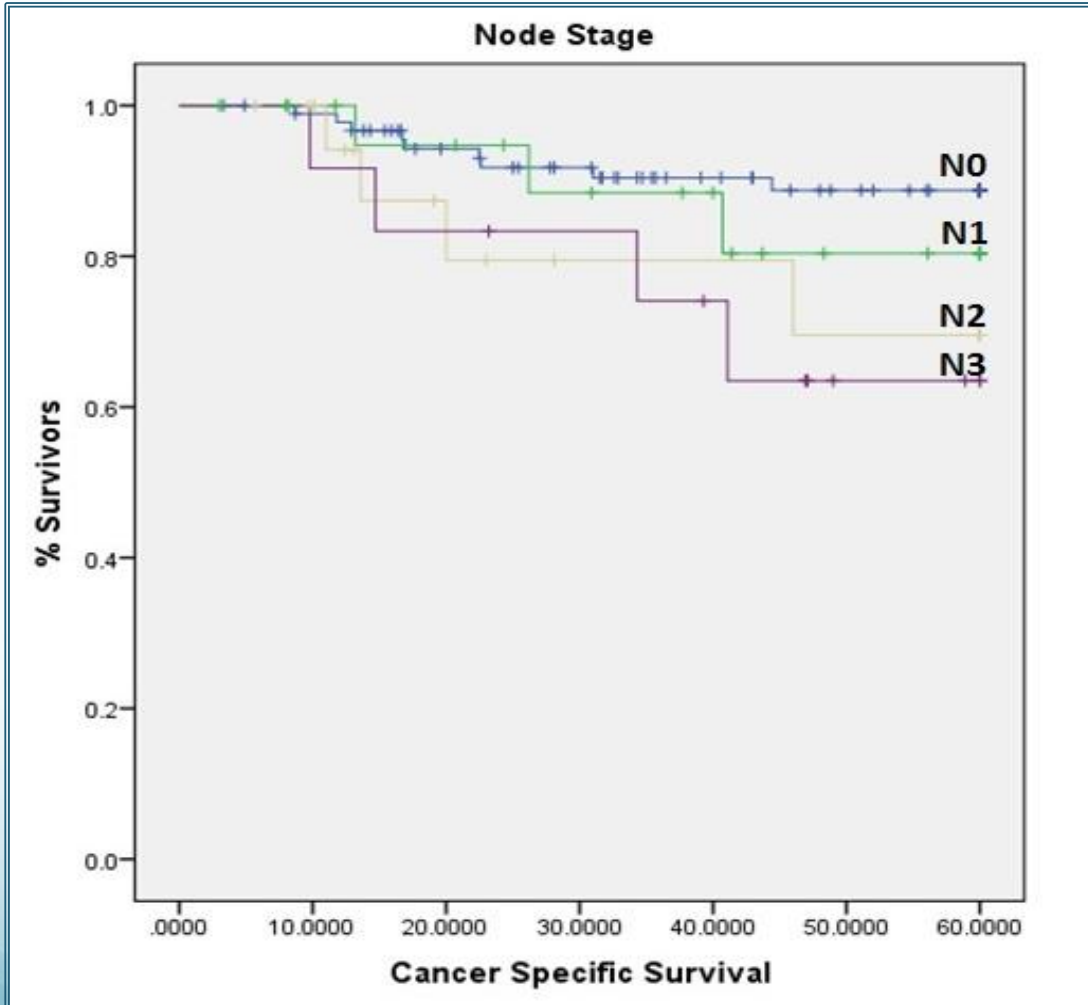
- **148** patients treated with curative intent
- **24** total deaths
- Estimated overall 5 year survival: **84%**
- **20** cancer specific deaths
- Estimated cancer specific 5 year survival: **86%**

TNM Tumour Stage Cancer Specific Survival



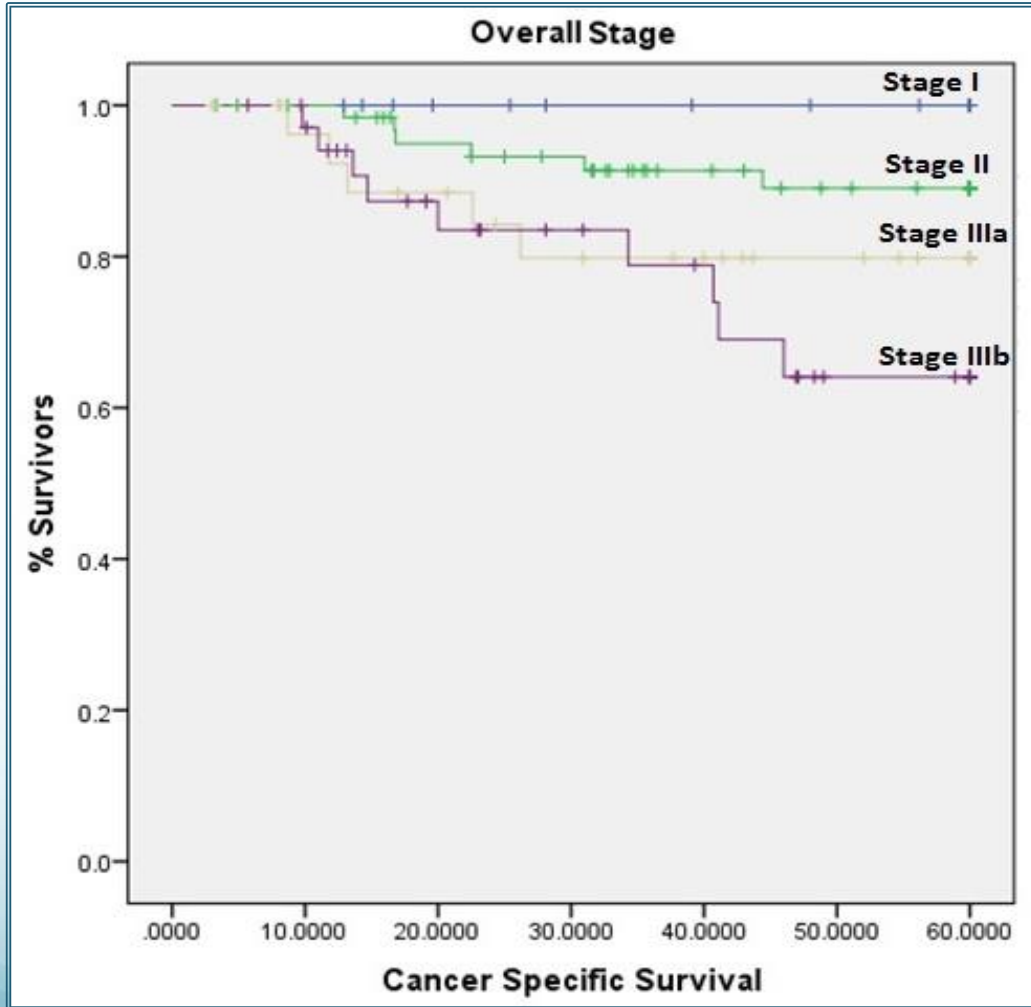
Tumour Stage	Patients n (%)	Deaths n (%)
1	21 (14)	0
2	75 (51)	7 (9)
3	29 (20)	7 (24)
4	23 (15)	6 (26)
Total	148	20

TNM N Stage Cancer Specific Survival



Nodal Stage	Patients n (%)	Deaths n (%)
0	93 (63)	9 (10)
1	23 (15)	3 (13)
2	20 (14)	4 (20)
3	12 (8)	4 (33)
Total	148	20

Overall Cancer Stage Cancer Specific Survival



Overall Stage	Patients n (%)	Deaths N (%)
1	18 (12)	0
2	65 (44)	6 (9)
3a	29 (20)	5 (17)
3b	36 (24)	9 (25)
Total	148	20

Summary

Anal cancers have an excellent prognosis with over 70% 5 year survival rates

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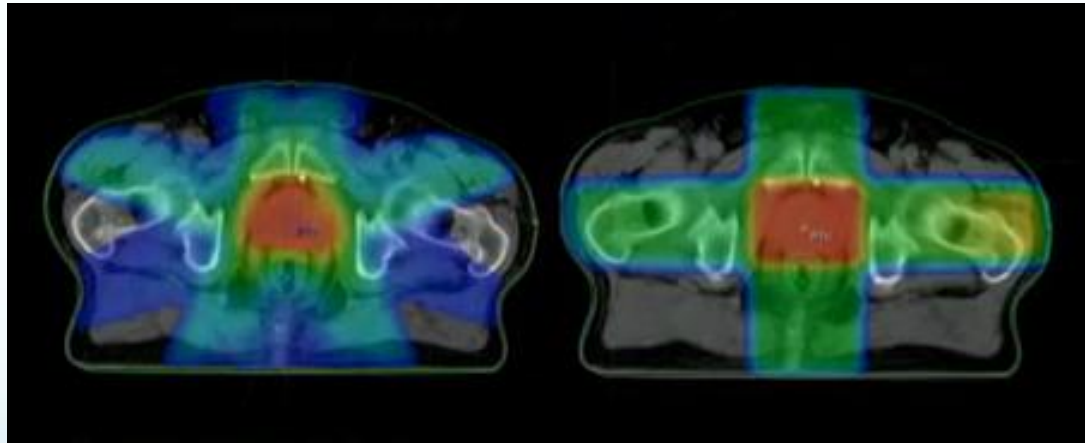
Our study:

+ Anal circumference >2/3

Future Directions

Tailored therapy using Intensity Modulated Radiotherapy

- Dose reduction for early disease
- Dose escalation for locally advanced disease
- Reduce bladder and bowel toxicity



IMRT

3D Radiotherapy

Thank You