

Skeletal and cardiac late effects in prostate cancer patients

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Overview

- What hormones are used in prostate cancer,
- When they are used,
- Effect on fracture events,
- Effect of cardiac events,
 - whether a diagnosis of prostate cancer affects surgery rates,
- and conclusions.



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Hormone therapy and prostate cancer - what

- Testosterone drives prostate cancer growth, so hormones work to stop the effect of testosterone by either:
 - Blocking a different hormone that stimulates testosterone production (the GnRH analogue/LHRH antagonist treatments)
 - Blocking testosterone binding with the tumour (anti-androgen treatments)
- Well publicised side effects are:
 - Hot flushes/sweating
 - Impotence
 - Weight gain



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Hormone therapy and prostate cancer - when

- 'Adjuvant hormonal therapy is recommended for a minimum of 2 years in men receiving radical radiotherapy for localised prostate cancer who have a Gleason score of ≥ 8 .'
- Generally not recommended for relapse, except in aggressive /advanced cases.
- In advanced cases, 3-6 months neoadjuvant HT is recommended when radical radiotherapy is chosen. (Gleason 8 advice \uparrow applies).
- Generally for men presenting with metastatic disease.

NICE CG58 Guidance



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Evidence of adverse effects

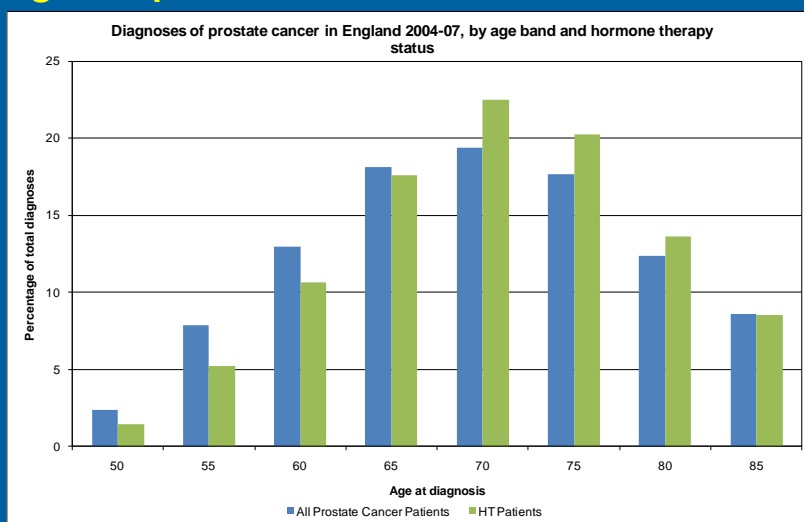
- NEJM 2005; 352; p154 – dose-response relationship between androgen-deprivation therapy and increased risk of fracture.
- Cancer 2007; 110; p1493 – “Newly diagnosed prostate cancer patients who received ADT for at least 1 year were found to have a 20% higher risk of serious cardiovascular morbidity compared with similar men who did not receive ADT. Subjects began incurring this higher risk within 12 months of treatment.”
- Are the same effects seen in England? How does this compare to background population?



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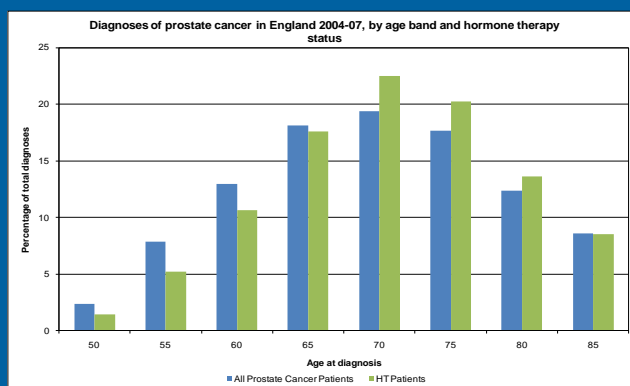
Diagnosis patterns



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Diagnosis patterns

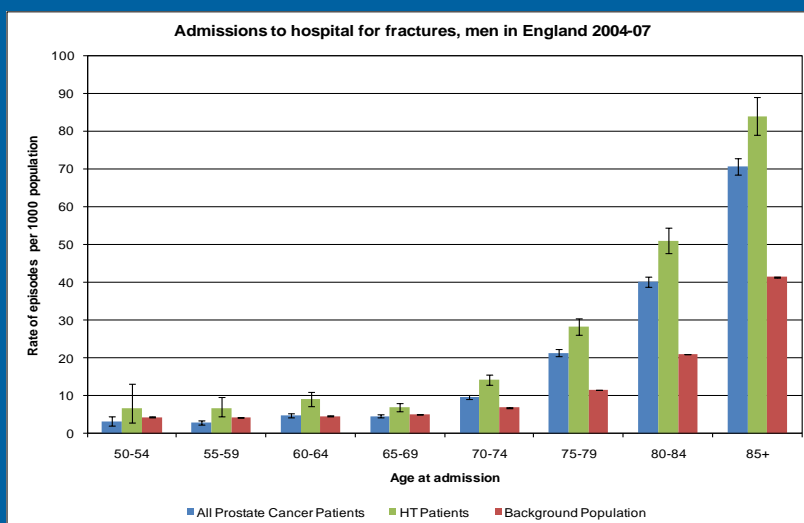


- For each age, proportion of HT increases at older ages: 37% for 70-74 year olds

Skeletal events

- Men diagnosed with PCa from NCDR, linked to HES for 2004-07.
- Men are flagged if they have received any hormone therapy at any point, *BUT* will probably be some overlap between the HT/non-HT groups.
- Looking for admissions with a S*2 ICD10 code – specific fractures, or certain T codes for multiple fractures.
- Fracture admissions for all men in England for same time period used as age-specific background.
- Rates for prevalent population (1990 onwards) / total population.

Skeletal events



Skeletal events - results

- At ages 55 upwards, men having hormone therapy have higher rates of admission for fractures compared to general population. 2.4 times at age 75-79.
- For the same age group, men having hormone therapy have higher rates of admission for fractures compared to the total of prostate cancer patients.
- At age 70 and older, total prostate cancer patients have higher rates of admission for fractures compared to background population.
 - but at some younger ages this is lower.

Skeletal events - results

- The average time between diagnosis and first admission is shorter in hormone therapy patients than for all prostate cancer patients.
- However, this is predominantly affected by 80+ age groups – at ages 55 to 74 the time is shorter in the overall group of prostate cancer patients.

Age Group	Time to first admission (years)	
	Hormone patients	All patients
50	2.6	2.2
55	3.7	2.1
60	3.8	2.6
65	4.6	3.1
70	4.3	3.6
75	4.3	4.3
80	3.2	4.7
85	2.3	5.2
All	3.8	4.5



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Cardiac events

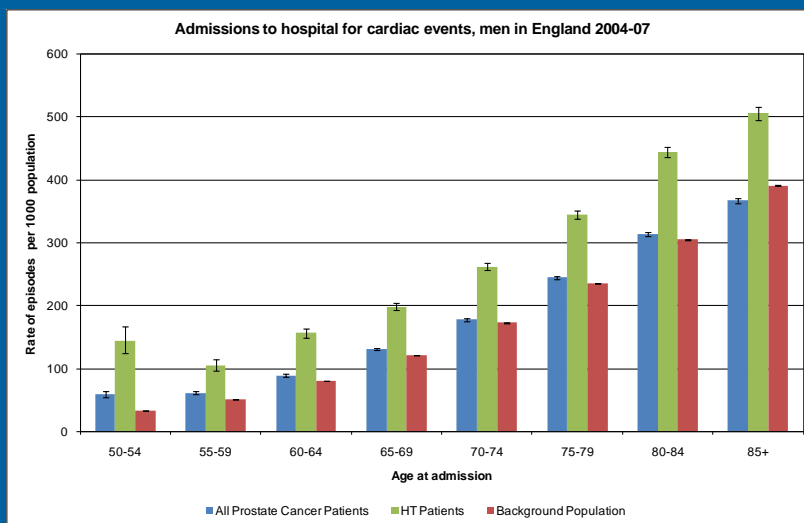
- Men diagnosed with PCa from NCDR, linked to HES for 2004-07.
- Looking for admissions with a I20-I28, I30-I52 ICD10 code – various heart diseases.
- Men are flagged if they have received any hormone therapy at any point, *BUT* will probably be some overlap between the HT/non-HT groups.
- Cardiac admissions for all men in England for same time period used as age-specific background.
- Rates for prevalent population (1990 onwards) / total population.



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Cardiac events



Cardiac events - results

- At all ages, men having hormone therapy have higher rates of admission for cardiac events compared to general population. Over 4 times at age 50-54.
- Also, men receiving hormone therapy have higher admission rates than the total of men diagnosed with prostate cancer.
- At all ages, total prostate cancer patients have rates of admission for cardiac events which are close to the background population (within a few percent).

Cardiac events - results

- The average time between diagnosis and first admission is shorter in hormone therapy patients than for all prostate cancer patients.
- This is consistent at ages 70+, with no difference at younger ages.

Age Group	Time to first admission (years)	
	Hormone patients	All patients
50	1.5	1.5
55	1.4	1.3
60	1.8	1.8
65	2.1	2.2
70	2.2	2.6
75	2.6	2.9
80	3.0	3.3
85	3.2	3.6
All	2.6	2.9



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Conclusions and discussion

- Prostate cancer patients have a generally higher rate of admissions for fractures, and this is even higher in those who have received hormone therapy
 - Evidence on bisphosphonates mixed; not currently recommended
- Those treated with hormone therapy are at increased risk of admission for cardiac events
 - Awareness, diet and exercise



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Thanks for your attention!

- Prostate cancer patients have a generally higher rate of admissions for fractures, and this is higher again in those who have received hormone therapy
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 - Awareness, diet and exercise



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