Hormone treatment in prostate cancer: improving health and well being

Mr Mutie Raslan
Clinical Fellow, Department of Urology, Salford Royal NHS Foundation Trust
On Behalf of the Improving Health and Well Being Project team

Prof. Noel Clarke (Consultant Urological Surgeon, SRFT & The Christie)
Mr. Satish Maddineni (Consultant Urological Surgeon, SRFT & The Christie)
Dr. Tony Elliott (Consultant Oncologist, SRFT & The Christie)
Jane Booker (Cancer specialist nurse, The Christie)
Jane Kingham (Urology specialist nurse, SRFT)
Margaret Russell (Cancer specialist nurse SRFT)
Sally Botham (Cancer specialist nurse, SRFT)
Hellen Farrell (Cancer specialist, SRFT)
Helen Johnson (Cancer specialist nurse, The Christie)
Prostate cancer is the commonest male cancer in the UK (>40,000 new diagnoses per year)

Hormone therapy with LHRH Analogues to reduce Testosterone is one of the mainstays of treatment

>1000 new patients/year start hormone therapy in Manchester

Hormone therapy has major metabolic consequences for men undergoing this treatment

Current urological practice in the UK does not include rigorous assessment of baseline health of these men to identify risk factors and to take moderating steps to improve health for the duration of time that they receive this therapy
Bone health

• Only 20% of men with prostate cancer actually have ‘normal’ bone density before starting on hormone therapy

• Hormone therapy increases the risk of reduced bone density

• Patients with loss of bone density are at greater risk of fractures

• Fracture is associated with > 2-fold increased rate of death

• Fractures requiring hospitalisation are associated with approx 3-fold increased rate of death
Prevalence of osteoporosis increases with increasing duration of ADT

![Graph showing the prevalence of osteoporosis, osteopenia, and normal bone density with increasing duration of androgen deprivation therapy (ADT).](image)

Metabolic Syndrome

- Androgen deprivation therapy increases the risk of developing metabolic syndrome

- This results in
  - Increase triglyceride levels
  - Reduce high density lipoprotein (HDL) levels
  - Increase waist circumference
  - Impaired fasting glucose tolerance
  - Hypertension
  - Cognitive impairment

- This will all lead to an increase risk of developing CVS disease
Metabolic syndrome

Androgen deprivation therapy increases the risk of cardiovascular toxicity

Aims & Objectives

• Create a pathway providing men with internationally agreed best practice care when starting hormone therapy

• Identify patients who are at risk of developing side effects as a result of testosterone withdrawal

• Provide an appropriate care and self-management plan for patients to minimise the consequences of treatment
Methods-1

- Patients with prostate cancer identified through MDT & clinics

- CNS’s explain the pathway to patients at clinic appointments supported by an invitation letter

- At entry: detailed clinical assessment, DEXA scan, FBC, U&Es, LFTs, Bone profile, Lipids, PSA, Vit-D, HB A1c and CAN – move referral are all performed

- Follow up at 3 monthly intervals for the first year by CNSs where clinical assessment and blood tests are repeated at each encounter

- At 12 months: repeat DEXA scan is performed to assess the impact of Hormone treatment
Methods-2

- Assessment proforma - completed by CNSs
- Patient information letter
- Mock blood form & DEXA scan request forms (To facilitate the process)
- GP information letters
- Excel spread sheet for data collection
Methods-3

Assessment proforma

<table>
<thead>
<tr>
<th>Metric</th>
<th>At 0 Months</th>
<th>At 3 months</th>
<th>At 6 Months</th>
<th>At 9 Months</th>
<th>At 12 Months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood pressure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pulse</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waist</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Height</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Creatinine</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calcium</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phosphate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ALP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>eGFR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vitamin D</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HbA1c</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Cholesterol</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HDL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LDL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Triglycerides</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ferritin</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Testosterone</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Has there been any history of cardiovascular events since hormone treatment started i.e. MI, Stroke, and/or TIA?

<table>
<thead>
<tr>
<th>Duration</th>
<th>0-3 Months</th>
<th>3-6 months</th>
<th>6-9 months</th>
<th>9-12 months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

If yes please specify:  | If yes please specify:  | If yes please specify:  | If yes please specify:  |
• 23 patients recruited into the pathway since Oct 2015

• Median age is 73.3 (49-92)

• 17 patients had DEXA scan so far. 3 DNA'd. 3 awaiting

• Decreased bone density (osteoporosis or osteopenia) was identified in 11/17 (71%)
DEXA Scan results

N=17

- Normal Bone Density, 5, 29%
- Osteopenia, 11, 65%
- Osteoporosis, 1, 6%

-Manchester Cancer
Results-2

• Results are being communicated to the GPs with a recommended action plan such as starting patients on Calcium & Vit D supplements

• Osteoporotic patients have been started on annual bisphosphonate (Zoledronic acid) infusion
Results-3

• 22/23 patients offered CAN-move referral

• 7 patients accepted the referral

• 15 patients declined

• Reason for decline was that they maintain regular physical activity. Did not find it necessary

• 1 patient out with our area therefore has not been referred
Results-4

• Metabolic changes in these patients are being monitored

• No change in the metabolic baseline has been noticed. (However it is still early to comment on this)

• Majority of these patients only had their 1st follow up after their 1st hormone injection

• BMI, waist circumference, BP, HbA1c, Lipids are/will be all measured at each clinical encounter
Challenges

• Unwillingness of a proportion of patients 68% to travel to the Christie hospital to have their DEXA scan.

• Recruiting patients is time consuming. Extra pressure on cancer specialist nurses as no dedicated slots for the consultation.

• Expense challenges: cost of DEXA scans, bloods tests and nurses and clinicians time. However the average hospital cost for a patient undergoing hip fracture surgery is 12000.0£*.

Conclusion

• There is a necessity to identify patients at risk of developing serious side effects as a result of hormone manipulation therapy

• Challenges have been identified i.e. DEXA scans are now being requested at SRFT, more time is needed for CNSs to complete their assessment

• The project has been well received by patients and by staff