UROLOGY IN JAMAICA

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OUTLINE

- overview of postgrad training in JA/c'bbbean
- overview of urology services offered - numbers/skill of urologists, equipment
- profile of patients (KP stats) - focus on stone burden
- prostate cancer
- ESRD/dialysis
Prior to 1970, all urology in Jamaica was done by general surgeons.

- 1970: Professor Ludlow Lawson-Douglas was appointed Chief Consultant urologist at the Kingston Public Hospital (KPH)

- 1973: Consultant Urologist at University Hospital of the West Indies (UHWI)


- 1994: Doctor of Medicine in urology established at UHWI

- First graduate: William Aiken in 1998

- Since then: 13 persons have graduated from the D.M. program.
D.M. Program

- Two years rotating through the surgical specialties
- Then D.M. 1
- Pass- Hallelujah!!!
- Fail- change your career path!
- Then 5 years in urology. The penultimate year spent abroad.

Collaborations

- Prof Al Burnett- instrumental in us starting the AUA in-service exams
- Professor Chris Eden from the UK- laparoscopic radical prostatectomies at CRH
Four Hospitals of the 16 public hospitals in Jamaica offer urological services.

- KPH and UHWI in Kingston
- Cornwall Regional Hospital in Montego Bay
- Mandeville Regional Hospital
- Health care is two-tiered: public and private
Services offered

- **KPH**
  - 3 clinics
  - 5 operating days

- **UHWI**
  - 3 clinics
  - 2 operating days

- **CRH**
  - 2 Clinics
  - 2 Operating days

**KPH: Urology Service**

- Largest urology unit in Jamaica
New Patient referrals

2013 New Patient Referrals

- LUT Obstr: 33%
- Ca Prostate: 27%
- Renal Mass: 8%
- Other: 25%
- Haematuria: 24%
- Stone/Hydro: 3%

2012 vs 2013
<table>
<thead>
<tr>
<th>Procedure</th>
<th>2012</th>
<th>2013</th>
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</thead>
<tbody>
<tr>
<td>RRP</td>
<td>8</td>
<td>13</td>
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<tr>
<td>Open Stone Surgery</td>
<td>64</td>
<td>60</td>
</tr>
<tr>
<td>PCNL</td>
<td>5</td>
<td>20</td>
</tr>
<tr>
<td>Ureteroscopy</td>
<td>5</td>
<td>40</td>
</tr>
<tr>
<td>TURP</td>
<td>33</td>
<td>75</td>
</tr>
<tr>
<td>Open Simple Prostatectomy</td>
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<td>20</td>
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<tr>
<td>Simple Nephrectomy</td>
<td>9</td>
<td>16</td>
</tr>
<tr>
<td>Radical Nephrectomy</td>
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<tr>
<td>TURBT</td>
<td>46</td>
<td>32</td>
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<tr>
<td>Cystectomy</td>
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<td>4</td>
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<tr>
<td>OIU/DVIU</td>
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<td>59</td>
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<tr>
<td>Urethroplasty</td>
<td>7</td>
<td>14</td>
</tr>
<tr>
<td>Penile fracture</td>
<td>8</td>
<td>17</td>
</tr>
</tbody>
</table>
Stone Burden at KPH

- 3 fellowship trained endourologists in Jamaica
- 2 in Kingston, 1 in CRH

Disease Burden: Jamaica

- Is there epidemiological data for RS in Jamaica?
- Do we see large numbers of RS patients?
- What data do we have?
KPH Urology

- Year 2010
  - 1898 New Patients
  - 299 Renal Stones - 16%
  - 93 Hydronephrosis (?cause) - 5%

KPH Urology

- Year 2013
  - 1530 New Patients
  - 231 Renal Stones - 15%
  - 131 Hydronephrosis, (?cause) - 9%
- Year 2014
- 1640 New Patients
- 330 Renal Stones - 20%
- 192 Hydronephrosis, (?cause) - 11.7%

For the years assessed
New patients with Renal Stones = BPH!
858 each
Elective Surgeries

- 20% Stone surgery
- 27% BPH
- 15% Other Elective Surgeries

KPH RS Surgery: The Reality

- No ESWL
- No laser
- No Flexible URS
- limited disposables
- Old equipment
Open stone surgery: KPH

- Various open procedures are still being done
- Stone free rates for 2009-2011 were 53/77 (58.3%)
- Non-staghorn stones 14/23 (60.9%)

Ureteroscopy at KPH

- 58 Elective URS procedures between 2012 and 2014
- Details on stone burden not recorded
- All done with semi-rigid scope and pneumatic lithotripsy
Ureteroscopy at KPH

- Stone free rate 48/58 (83%)
  - 1 equipment failure, 3 retropulsed stones
  - 2 failed basket retrievals, 4 unable to access stone
- CROES Ureteroscopy Global Study (77-94%)\(^1\)
  - 9,864 ureteroscopies in 32 countries
  - Stone free rates: Distal (94%), Mid (89%), Proximal (85%), Multiple (77%)

\(^1\) Perez Castro et al. Eur Urol. 2014; 66: 106

PCNL at KPH

- 41 PCNL procedures between 2011-2014
- Info available for 39
- Prone and supine
PCNL at KPH

- 12 staghorn stones
- 3 lower pole stones < 2cm
- All others > 2cm or multiple stones

PCNL at KPH
Stone free?

- PCNL procedures at KPH
  ○ 28/39 stone free - 72%

- CROES PCNL Global Study - 75.7%
  ○ 5803 procedures, 96 centres, 25 countries
ESRD and RENAL REPLACEMENT THERAPY

- 500 new ESRD patients/year
- Last transplant at KPH 2011
- For vast majority dialysis (mainly HD) is the treatment for ESRD

Distribution of CKD patients by Parish and gender .....2011 JRR
The major causes of CKD were hypertension (35.2%), diabetes mellitus (29.7%), CGN (6.9%) and SLE (6.9%) (CRR 2007 Soyibo, Barton).

**Primary Cause of Kidney Disease**

- Hypertension: 40%
- Diabetes Mellitus: 35%
- Cystic Glomerular Nephropathy (CGN): 10%
- SLE: 5%
- Other: 5%

**RRT Type in ESRD (N=625)**

- Hemodialysis (HD): 95%
- Peritoneal Dialysis (PD): 3%
- Transplant: 2%
Economic Burden

**Direct Costs**

- Dialysis cost - $6500.00 per session (90:1)
- Erythropoietin - $3500.00
- Zemplar - $1000.00

- Ideally three dialysis sessions per week
- Majority of patients only receiving two sessions per week

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**AVERAGE COST FOR HEMODIALYSIS TREATMENT AT UHWI**

- Ambulance/Transportation* - $1,554,000
- Medication** - $44,800
- EPO - $88,400
- Dialysis Treatment - $936,000
Morbidity

- Majority of admissions secondary to dialysis catheter related reasons or infections
- Lower Respiratory Tract Infections
- Cardiovascular Related Pathology
- Cerebrovascular Accidents
- Other admissions related to comorbidities such as complications of diabetes

Psychosocial & Quality of Life

- Multiple international papers documenting a deleterious effect on Quality of life with patients with ESRD on Haemodialysis.
- At UHWI patients reported
  - Reductions in general health
  - Physical functioning
  - Physical role
  - Emotional Role

Transplant in Jamaica - History

- First transplant in Jamaica September 1970
- 3 – 5 performed per year until 1993
- Over 100 performed in total
- Approximate 75% survival success rate with kidney functioning at 5 years


Transplant – Current Status

- 4 transplants performed over the last year
- Cornwall Regional Hospital
- Living Donor Laparoscopic Nephrectomy
- Patients doing well
### Challenges to Transplantation

- **Limited Donor Pools**
  - Living Donors
  - Deceased Organ Donors
- **Infrastructural Challenges**
  - Availability of ICU beds to maintain potential “brain dead” deceased donors
  - Ability to fund a complete “on call” nationwide transplant team
  - Cost of HLA compatibility testing
  - Cost of Surgery
  - Cost of immunosuppressive drugs

### Urological Challenges to Transplantation

- # of Operating Lists per week
  - On Average 3 cases per list
- UHWI - Current Waiting List in excess of 350 cases
  - On Average 9 Cases added to waiting list per week.
  - Will need dedicated renal transplant surgeons and operating time...
Prostate cancer

- Major ethnic group in Ja-afro-caribbean
- 91.2% of the population
- Prostate cancer accounts for almost 1/3 of all cancers diagnosed


Local Data 2003-2007

TN Gibson, B Hanchard, N Waugh, D McNaughton
West Indian Med J 2010; 59 (5): 456
• Age-standardised rate of 304/100,000

• Conclusion:
  ○ Jamaican men in Kingston had a high incidence of prostate cancer. Even higher than black-americans for that period.


• Age-standardized incidence - 78.1/100,000
  ○ Most common cancer in Jamaican men
  ○ (much less than Glover’s report)

• Age-standardized mortality - 53.9/100,000
  ○ The most common cause of male cancer related deaths in Ja.


Local Data – Mortality Statistics

- Mortality 53.9/100,000 – one of the highest in the world
- USA – 22.3/100,000 (SEER database)
- UK- 23.1/100,000 (Cancer Research UK)
- Canada- similar to the USA(Canadian Cancer registry)

- PSA testing available in Ja since 1989
- No formal national screening policy
- Most organised screening done by the Jamaica Cancer Society

**Barriers to screening**
- Fear of the DRE (Male gender of the examining physician)
- Fear of diagnosis of a medical disease
- Socioeconomic reasons
- Fear of treatment related adverse side effects

**Options for management**

- **Active surveillance**
  - Practiced, but rarely. High risk population. Men not likely to adhere to follow-up protocol

- **Radical prostatectomy**
  - Commonly performed. Mostly done open. One urologist does laparoscopic RP

- **Morrison et al in 2011 reported on outcomes of RRP done at UHWI**
  - Biochemical survival free rate of 78.4%

- **Morrison BF et al (2011) Radical prostatectomy outcomes at the University Hospital of the West Indies: 2000–2007 West Indian Med J 60(1) 68–72**
Jamaican men presented at a slightly older age
- 61 vs 58 years

Higher PSA levels
- 8.8 vs 6.2 and 5 (p <0.05)

Gleason score
- 44% >7 vs 8% and 0% (<0.01)

Jamaican and AA men had worse pathological outcomes after RRP

5 year biochemical free survival similar for Ja men and AA (76/74%) and was less that CA at 98%. 
- **Brachytherapy**
  - Offered in the private system

- **EBRT**
  - Available at 2 public hospitals, KPH and CRH
  - Cobalt, used for other cancers across the island
  - Privately- Varian Linear Accelerator available

- **ADT**
  - Both surgical and chemical

- National Health Fund - government run. Subsidizes drug treatment and enables greater access

- Goserelin, leuprolide, bicalutamide, flutamide

- More recently abiraterone
Thank You!!