Anterior resection syndrome following sphincter-preservation resection in the UK population

ACPGBI Edinburgh 2016

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on behalf of the UK ARSS (Anterior Resection Syndrome Study) Group
Functional outcomes following anterior resection

• Functional outcomes poorly assessed following anterior resection

• Incontinence, urgency, frequency, obstructed defaecation
  → Unpredictability
  → Psychosocial effects
  → Impact on Quality of Life
Anterior resection syndrome

• Anterior resection syndrome:

  “disordered bowel function after rectal resection, leading to a detriment in quality of life”
THE LARS SCORE

1. Do you ever have occasions when you cannot control your flatus (wind)?

2. Do you ever have any accidental leakage of liquid stool?

3. How often do you open your bowels?

4. Do you ever have to open your bowels again within one hour of the last bowel opening?

5. Do you ever have such a strong urge to open your bowels that you have to rush to the toilet?
Methods

• **Questionnaire-based epidemiological study**
  - Clinical parameters
  - LARS score
  - EORTC QLQ-C30

• **19 Collaborating Trusts (24 Hospitals) acted as Participant Identification Centres**

• **1197 replies**

• **Primary aim:** establish proportion of patients with %ARS

• **Secondary:** assess risk factors and link with QOL
THE LARS SCORE

1197 Replies

18 Incomplete
- 2 completely empty
- 8 LARS score empty
- 3 QOL score empty
- 1 LARS & QOL scores empty
- 4 Clinical details empty

86 Ineligible
- Stoma 28
- Stoma closed < 1 year ago 13
  - Chemotherapy 12
  - Surgery not for cancer 10
  - Surgery < 1 year ago 6
- Further anorectal surgery 6
  - Anastomotic leak 4
  - No surgery 3
  - Local recurrence 2
- Tumour in transverse colon 1
  - Alzheimer's 1

1093 Included
## Results

<table>
<thead>
<tr>
<th>Total (n)</th>
<th>Men (%)</th>
<th>Women (%)</th>
<th>Median age (range)</th>
<th>Year of surgery</th>
</tr>
</thead>
<tbody>
<tr>
<td>1093</td>
<td>698 (63.9)</td>
<td>395 (36.1)</td>
<td>65 (28-88)</td>
<td>1990 - 2014</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total (n)</th>
<th>Stoma (n)</th>
<th>Stoma (%)</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>1093</td>
<td>559</td>
<td>51.1 %</td>
<td>10.0 % - 100 %</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total (n)</th>
<th>SCRT % (range)</th>
<th>LCRT % (range)</th>
<th>Adjuvant chemo % (range)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1093</td>
<td>7.2 % (0 - 30.2)</td>
<td>15.0 % (0 – 51.7)</td>
<td>39.5 (17.2 – 60)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total (n)</th>
<th>Open % (range)</th>
<th>Lap % (range)</th>
<th>Converted % (range)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1086</td>
<td>50.9 (13.2 – 76.7)</td>
<td>38.5 (7.2 – 75.4)</td>
<td>10.6 (4.7 – 21.4)</td>
</tr>
</tbody>
</table>

LCRT = Long-course Chemo-Radiotherapy. SCRT = Short Course Radiotherapy
Overall results

• No LARS 408 = 37.2%

• Minor LARS 238 = 21.9%

• Major LARS 447 = 40.9%
Components of LARS score

- **Urgency**
  - Unanswered: 0%
  - Less than once per week: 20%
  - More than once per week: 80%

- **Clustering**
  - None: 0%
  - Less than once per week: 40%
  - More than once per week: 60%

- **Faecal incontinence**
  - None: 0%
  - Less than once per week: 60%
  - More than once per week: 40%

- **Flatus incontinence**
  - None: 0%
  - Less than once per week: 40%
  - More than once per week: 60%
Risk factors for LARS

- Neoadjuvant long-course chemoradiotherapy
  - $p = <0.0001$
  - Odds ratio 3.89 (95% confidence interval 2.49 to 6.07)

- Neoadjuvant short-course radiotherapy
  - $p = 0.0001$
  - Odds ratio 3.14 (95% confidence interval 1.76 - 5.61)

- Female gender
  - $p = 0.047$
  - Odds ratio 1.33 (95% confidence interval 1.00 to 1.76)

- Age $\leq 65$ (median age)
  - $p = 0.0018$
  - Odds ratio 1.54 (95% confidence interval 1.18 – 2.03)
Quality of life results

Difference between LARS groups significant at \( p =< 0.0001 \) for all scales (Kruskal-Wallis test)

![Bar chart showing mean scores for different quality of life scales across LARS groups.](image)

- Global Health
- Physical functioning
- Role functioning
- Emotional functioning
- Cognitive functioning
- Social functioning

Legend:
- No LARS
- Minor LARS
- Major LARS
- Population norm
Fatigue
Nausea & vomiting
Pain
Dyspnoea
Insomnia
Appetite loss
Constipation
Diarrhoea
Financial difficulties

Mean score

Difference between LARS groups significant at p=<0.0001 for all scales (Kruskal-Wallis test)

No LARS
Minor LARS
Major LARS
Population norm
Discussion

• LARS affects a considerable proportion of patients post anterior resection

• Long term impact on QoL

• Implications for counselling patients

• LARS score suitable for routine use

• Considerable variation in treatment of rectal cancer in the UK
Conclusions

• Major LARS affects >40% of patients undergoing anterior resection and negatively affects QoL
• Prospective study needed to determine risk factors
• Improved research needed into treatment for LARS

Thank you for your contact. Following reversal my life has changed. I am ruled by my bowels, have to be careful what I eat and drink. Life will never be the same. But what choice did I have? I had to go with the treatment good that it was. I am still alive for my family.
Collaborators

Mr S Ahmed; Mr H Patel; Mr M Machesney; Mr P Giordano; Mr C Elton; Dr R Glynne-Jones; Ms A Wheeler; Miss H Pardoe; Mr DA Lawes; Mr CM Bailey; Mr STR Bailey; Miss H Lloyd; Mr A Cook; Ms J Elliott; Mr J Huang; Mr M Hanson; Mr M George; Mr J Clark; Dr D Gilbert; Mr I Jenkins; Professor R Kennedy; Ms C Taylor; Miss A Varma; Mr N Smart; Ms J Garwood; Mr A Banerjea; Mr R Austin; Ms A Wordley; Mr M Potter; Mr A Renwick; Mr N Manimaran; Mr J Camilleri-Brennan; Professor A Watson; Mr S Yalamarthi; Mr N Binnie; Mr K Campbell; Professor R Steele.

Acknowledgements

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