ACPWH Annual Conference 2011
The Margie Polden Lecture

Prolapse: The Role of Physiotherapy in its Management and Prevention

Diane Stark
Physiotherapist
Functional Bowel Service
Leicester Royal Infirmary
“..will benefit from physiotherapy directed at strengthening the pelvic floor muscles together with attention to chest infections, obesity, constipation and workloads”

“It makes good sense for all patients to be offered an intensive 6-8 week period of specialist physiotherapeutic treatment before surgery is mooted or once they are placed on the surgical waiting list. In any case surgery will be delayed whenever practicable until childbearing is complete; physiotherapy or a pessary may help tide a woman over until then.”
POPPI - a 10 year journey

- FEASIBILITY STUDY
- FEASIBILITY - ETHICS
- FEASIBILITY FUNDING - CSO
- POPPY FUNDING APPLICATION - CSO
- SITE INITIATION VISITS
- RECRUITMENT
- POPPY main trial
- CSO
- DATA COLLECTION & ANALYSIS
- PRESENTATION OF RESULTS/PUBLICATIONS

2002
- Physio for POP?

2003
- FEASIBILITY STUDY

2004
- POPPY FUNDING APPLICATION - CSO

2005
- SITE INITIATION VISITS
- RECRUITMENT

2006
- PHYSIO DAY
- ETHICS/R&D

2007
- ETHICS/R&D

2008
- CSO

2009
- CSO

2010

2011
- DATA COLLECTION & ANALYSIS
- PRESENTATION OF RESULTS/PUBLICATIONS

Legend:
- POPPY Feasibility
- POPPY main trial
- Ethics R&D applications
- Main trial recruitment
- Site initiation visits
Definition of POP

• Urogenital prolapse is defined as the symptomatic descent of one or more of: the anterior vaginal wall, the posterior vaginal wall, and the apex of the vagina (cervix/uterus) or vault (cuff) after hysterectomy. Urogenital prolapse is measured using the POP-Q system. (Abrams et al 2009)

• Objective findings of prolapse in the absence of relevant prolapse symptoms may be termed “anatomic prolapse”. (Abrams et al 2009)

• Qualitative study during POPPY feasibility 2003
POP-Q Bump 1996

Diagram with labeled anatomical parts:
- Aa
- Ba
- C
- Bp
- Ap
- D
- gh
- pb
- tvl

Scale: 3 cm
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### POP-Q normal values for stage 0

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<th>Internal</th>
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<td>Stage IV</td>
<td>Stage III</td>
<td>Stage II</td>
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- **Stage IV**: No abnormal POP-Q values are present.
- **Stage III**: Abnormal POP-Q values are present, indicating significant pelvic organ prolapse.
- **Stage II**: Moderate pelvic organ prolapse.
- **SI**: Severe pelvic organ prolapse.
- **Stage 0 or I (depending on tvl)**: Normal POP-Q values are present.
### POP-Q values for cystocele stage II, uterine stage I

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<th>No</th>
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<td>perineal body</td>
<td>2 cm</td>
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<tr>
<td>total vaginal length</td>
<td>10 cm</td>
<td></td>
</tr>
</tbody>
</table>

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|----|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Aa |     |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Ba |     |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| C  |     |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| D  |     |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Bp |     |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Ap |     |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

- Stage IV
- Stage III
- Stage II
- SI
- Stage 0 or I (depending on tvl)

Study in 2006/Reported ICS 2007
Funding Body: Physiotherapy Research Foundation and the CSP Charitable Trust [PRF/05/3]
Table 1. Physiotherapist experience and practical POP-Q training.

<table>
<thead>
<tr>
<th>Physiotherapist Grade</th>
<th>No. of Clinics attended for POP-Q training</th>
<th>No. of POP-Qs completed in study</th>
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<tr>
<td>Staff Grade (4 month rotation in Obstetrics &amp; Gynaecology)</td>
<td>4</td>
<td>17</td>
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<tr>
<td>Staff Grade (4 month rotation in Obstetrics &amp; Gynaecology)</td>
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<tr>
<td>Senior I in Women’s Health</td>
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<td>Senior I in Women’s Health</td>
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<tr>
<td>Clinical Specialist in pelvic floor dysfunction</td>
<td>3</td>
<td>12</td>
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<tr>
<td>Superintendent III in Continence</td>
<td>4</td>
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</table>
“I was with different consultants and they all do it in a slightly different way ... which was good for our learning but when you are trying to learn the first principles of something, that can be a bit confusing as well” (physiotherapist b)

“we have the advantage of ... trying to do new skills every 4 months ... so the POP-Q isn’t really out of the ordinary” (physiotherapist e)

“... and it completely threw me because I never feel like that” (physiotherapist c)

“I have kind of got to the stage where I kind of know what I’m doing but I’d really like the reinforcement of it by doing it with other people in the room and confirming that what I’m doing is right” (physiotherapist f)

“I must be feeling it correctly because we’re the same, and I think I took a lot of confidence from that” (physiotherapist e)

“I’m confident of my uncertainty” (gynaecologist 2)
Prevalence

• 50% of women over age 50 reported to complain of symptomatic prolapse (Swift 2000)
• 40% of women have prolapse (Hendrix 2002)
• In England around 23,000 prolapse repairs were performed in 2005/2006 (Department of Health, Hospital Episodes Statistics, 2009).
• 11.1% lifetime incidence of undergoing surgery for POP (Olsen 1997)
Aetiology of PFD

**Predispose**
- Collagen
- Race
- Ethnicity

**Incite**
- Childbirth
- Parity
- Radical pelvic surgery

**Decompensating**
- Ageing
- Diabetes
- Mobility/dexterity
- Disease

**Promote**
- Constipation
- Obesity
- Occupation
- Lung disease

normal support or function
abnormal support or function
Childbirth/Parity
• Lien (2004)
• DeLancey (2005)
• Patel (2006)
• Bartolini (2010)

Caesarian Section
• Larsson (2009)
• Tegerstedt (2006)
• Dolan (2010)

Nulliparity
• Hendrix 2002
Factors which promote -Lifestyle changes

- **Constipation** (Meidel 2009, Hendrix 2002, Arya 2005)
- **Occupation/heavy physical work** (Jorgensson 1994, Slieker-ten Hove 2009, Meidel 2009)
- **COPD/smoking** (Rinne 1999)
- **Exercise** (Ali-Ross 2009, Sung 2007)
- **Posture** (Lind 1996, Mattox 2000, Nguyen 2000)
Treatment options for POP

• Do nothing/observation

• Conservative treatment
  – Pessary
  – Pelvic floor muscle training
  – Lifestyle advice

• Surgery (physiotherapy as an adjunct to..)
### Do nothing/observation

<table>
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<tr>
<th>Study</th>
<th>Participants</th>
<th>Details</th>
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<tr>
<td>Meidel (2011)</td>
<td>280 women</td>
<td>(160 POP symptoms) POP-Q at baseline and after 5 years 47% unchanged 40% regression 13% progression</td>
</tr>
<tr>
<td>Gilchrist (2011)</td>
<td>62 women</td>
<td>POP-Q over 2 years 68% (42/62) continued observation 16% (10/62) pessary 16% (10/62) surgery</td>
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<tr>
<td>Bradley (2007)</td>
<td>259 women</td>
<td>max worsening of 2cm in 11% improvement of 2cm in 2.7%</td>
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Women with stage I, II, III prolapse

**Pessary + PFMT group**
- Pessary fitted
- 16 weeks, 5 physio appointments
- Home exercise programme

**Pessary only group**
- Pessary fitted
- No physio contact

ICS 2011 Poster no. 616
PFMT for POP—how might this work?

- “patient may experience relief of symptoms”
- “may strengthen muscles and prepare patient for normal function after surgery”
- “if POP reduces by a PFM contraction this is a good indicator for Kegels”

Baden Walker 1992, Kegel 1948
PFMT for POP-how might this work?

• Hypertrophy of musculature by strength training and improve timing of contractions against increases in IAP (Bo 2006)

• Differences in PFM between women with and without POP (DeLancey 2007, Borello-France 2007)

• Differences in urogenital hiatus between women with and without POP (DeLancey 1998, Athanasiou 2007, Dietz 2008)

• Increase muscle volume, shorten muscle length, improve closure of urogenital hiatus (Braekken 2010)
PFMT for POP research evidence


- Jarvis 2005
- Hagen 2009
- Ghroubi 2008
- Braekken 2010
- Frawley 2010
- Stupp 2011
• **Jarvis SK, Hallam TK, Lujic S, Abbott JA, Vancaillie TG.** Peri-operative physiotherapy improves outcomes for women undergoing incontinence and or prolapse surgery: Results of a randomised controlled trial. Australian and New Zealand Journal of Obstetrics and Gynaecology **2005;45:**300-3.

• **Frawley HC, Phillips BA, Bø K, Galea MP.** Physiotherapy as an adjunct to prolapse surgery: An assessor-blinded randomized controlled trial. Neurourology and Urodynamics **2010;29:**719-725.


• **Stupp L,** Resende APM, Oliveira E, Castro RA, Girao MJBC, Sartori MGF. Pelvic floor muscle training for treatment of pelvic organ prolapse: an assessor-blinded randomized controlled trial. International Urogynecology Journal 2011 (published online 12 April 2011)
A Multi-Centre Randomised Controlled Trial of a Pelvic Floor Muscle Training Intervention for Women With Pelvic Organ Prolapse

funded by the Chief Scientist Office

Suzanne Hagen, Chief Investigator
Diane Stark, Superintendent Physiotherapist
Cathryn Glazener, Professor of Health Services Research
Lesley Sinclair, Research Fellow
Don Wilson, Gynaecologist
John Norrie, Senior Triallist & Medical Statistician
POPPY Trial Steering Committee

September 2007
New outpatient notes screened

Woman attends clinic

Gynæ. assesses prolapse, completes GAF-A, gives Patient Information Leaflet

Eligible, agreeable women contacted by Trial Office

Consenting women complete baseline questionnaire and are randomised

PFMT (appoint at 0, 2, 6, 11 & 16 wks) or control (lifestyle leaflet)

6 months: re-assessed at clinic by gynaecologist, Complete GAF-B, discuss further treatment

6 and 12 months: follow-up questionnaire
Physiotherapy Intervention

• Length of intervention
  – K. Bo 1995 15-20 weeks
  – Laycock et al 2001 15 weeks minimum
  – N. DiNubile 1991 6-10 weeks

• Appointments at 0,2,6,11,16 weeks

• Clinical model

• All muscle training must satisfy principles of specificity and overload
• A subjective assessment

• Pelvic floor muscle exercise teaching

• Internal pelvic floor muscle assessment (PERFECT assessment)

• Individualised home exercise programme

• Lifestyle advice
Compliance with intervention

25 centres:
2093 women approached
603 eligible
447 randomised: 225 intervention, 222 control

Questionnaire response rates:
85% (381/447) at 6 months
66% (295/447) at 12 months

82% (365/447) attended for prolapse review at 6 months

80% in intervention group attended 4 or 5 physiotherapy appointments
Results summary

• significant difference in symptom (POP-SS) improvement at 6 and 12 months in favour of intervention group
• there was a tendency towards more improvement in POP-Q stage in the intervention group
• uptake of further prolapse treatment by 12 months was greater in the control group (55%) compared to intervention group (30%)
• additional benefits to the intervention group at 6 months of fewer urinary and bowel problems
• **PFMT is an effective intervention to offer women with prolapse**
**Prevention of prolapse**

**PFMT group**
- 16 weeks
- 5 physio appointments
- Taught exercises, lifestyle advice
- Home exercise programme
- Pilates-based classes

**Control group**
- No physio contact
- Lifestyle leaflet only

**Asymptomatic women**

**Wellbeing of Women**
# POPPY - a 10 year journey

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**Legend:**
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“..will benefit from physiotherapy directed at strengthening the pelvic floor muscles together with attention to chest infections, obesity, constipation and workloads”

“It makes good sense for all patients to be offered an intensive 6-8 week period of specialist physiotherapeutic treatment before surgery is mooted or once they are placed on the surgical waiting list. In any case surgery will be delayed whenever practicable until childbearing is complete; physiotherapy or a pessary may help tide a woman over until then.”
Summary

• New research in last 10 years
• Research takes time, money and teamwork
• Politics of NHS. Evidence based practice critical for our profession
• Need for guidelines to be developed because of new evidence for PFMT for POP and POPPY results
• Impact on us as a profession
• 23,000 prolapse repairs = 34WTE

Thank you