Prevention of OASIS

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Routine versus restrictive

Carroli & Belizan. Cochrane library, 2009

Routine versus Restrictive (8 studies)

After restrictive use:

- Less posterior perineal trauma
- Less suturing
- Fewer healing complications
- More anterior perineal trauma
Routine versus restrictive


Routine versus Restrictive (8 studies)

No difference:

- Urinary incontinence
- Severe vaginal and perineal trauma
- Dyspareunia
- Severe pain
Episiotomy: midline -v- mediolateral

Coats et al 1980

- Randomised 407 primiparae

- Incidence of OASIS
  - midline = 24%
  - mediolateral = 9%
254 primips

No midwife and only 13 (22%) doctors performed a truly mediolateral episiotomy (between 40 to 60 degrees from the midline)

Episiotomies angled closer to the midline significantly associated with OASIS (26 vs 37 degrees)
Episiotomy
Eogan et al BJOG 2006

- Case-control study (54 versus 46 controls)
- Mean angle of episiotomy smaller (30% versus 38% $p<0.001$)
- 50% risk reduction for every 6° from midline
- The relationship of episiotomy angle with risk of OASIS was sig ($p<0.001$)
Angle of episiotomy before and after repair

Kalis V et al 2008 (IJGO)

- 50 women undergoing first delivery
- Mediolateral episiotomy during crowning at 40 degrees away from midline
- Angle of scar measured after delivery = 22.5 degrees
- Should aim for 60 degrees at crowning
Vacuum versus Forceps

Thakar & Eason 2007

Comparison: Vacuum vs. forceps
Outcome: Anal sphincter tears

<table>
<thead>
<tr>
<th>Study</th>
<th>RD (fixed) 95% CI</th>
<th>RD (fixed) 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lasbrey</td>
<td>-0.02 [-0.04, 0.01]</td>
<td></td>
</tr>
<tr>
<td>Vacca</td>
<td>-0.10 [-0.17, -0.03]</td>
<td></td>
</tr>
<tr>
<td>Dell</td>
<td>0.02 [-0.13, 0.18]</td>
<td></td>
</tr>
<tr>
<td>Johanson89</td>
<td>-0.08 [-0.14, -0.01]</td>
<td></td>
</tr>
<tr>
<td>Johanson93</td>
<td>-0.03 [-0.07, 0.01]</td>
<td></td>
</tr>
<tr>
<td>Salamalekis</td>
<td>-0.02 [-0.05, 0.02]</td>
<td></td>
</tr>
<tr>
<td>Bofill</td>
<td>-0.17 [-0.23, -0.11]</td>
<td></td>
</tr>
<tr>
<td>Weerasekera</td>
<td>0.00 [-0.02, 0.02]</td>
<td></td>
</tr>
<tr>
<td>Fitzpatrick</td>
<td>-0.09 [-0.20, 0.02]</td>
<td></td>
</tr>
<tr>
<td>Total (95% CI)</td>
<td>-0.06 [-0.08, -0.04]</td>
<td></td>
</tr>
</tbody>
</table>

Total events: 100 (Vacuum), 191 (Forceps)
Decreasing the incidence of OASIS

Laine K et al 2008

- Intervention cohort study (n=12,369 VD)
- Slowing delivery of fetal head
- Right hand supports perineum grips infants chin
- Woman not to push while head is being delivered
- Midwife delivers infants head
- Perineal ring pushed under neonates chin
- Proper use of episiotomy
Decreasing the incidence of OASIS

Laine K et al 2008

- Significant decrease
  - OASIS (4% to 1%)
  - Instrumental deliveries (16% to 5%)
  - Increase episiotomy rates (14% to 21%)
National interventional program in Norway

- **2005-2007**
- **Training programme in 5 units**
  - Including both midwives and doctors
  - Hands-on training
  - Manual perineal protection
  - Standardization of delivery technique

Decreasing the incidence of OASIS

Hals et al 2010

- Intervention cohort study (n=40,152)
- Extended to 4 new centres (2=University, 2=County)
- Decrease 4.16 - 5.24% to 1.73%
- Greatest decrease in 4th degree tear
Decreasing the incidence of OASIS

Hals et al 2010
Vacuum del and OASIS
Raisanen et al 2012

- Population based study (n=16,802)
- OASIS > nulliparous women (3.4%) compared to multiparous women (1.4%)
- In nulliparous women lateral episiotomy was associated with 46% decreased incidence of OASIS especially in women with large babies and long second stage
Decreasing the incidence of OASIS

Laine K et al 2008
Prevention of perineal trauma

- Interventions with evidence from RCT’s
- Interventions with evidence from observational studies
- Interventions where evidence is weak or lacking
Antenatal Perineal massage
Beckmann & Garett Cochrane library 2006

RCT of 2434 women (3 trials)

- Reduced risk of perineal trauma requiring suturing (primips)
- Less risk of episiotomy (primips)
- Less pain at 3 months (Multips)

No difference

- 1\textsuperscript{st}, 2\textsuperscript{nd}, 3\textsuperscript{rd} and 4\textsuperscript{th} degree tear
- Instrumental delivery
- Sexual satisfaction
- Anal or urinary incontinence
EPI-NO birth trainer

- Balloon inflated to below pain threshold
- Contract and relax pelvic floor
- Finally ease balloon out to simulate childbirth
- 15 minutes/day after 37 weeks
- Observed ↓ episiotomy rates and intact perineum

Hillebrenner J et al 2001
Kovacs GT et al 2004
Kok J et al 2004
Cohain JS 2004
EPI-NO birth trainer
Ruckharberle E et al 2009

Multicentre RCT 276 primigravidae

<table>
<thead>
<tr>
<th>Table 2 Comparison of the modes of delivery according to the groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vaginal deliveries with</td>
</tr>
<tr>
<td>EPI-NO  (n = 107)</td>
</tr>
<tr>
<td>Intact perineum</td>
</tr>
<tr>
<td>Episiotomy</td>
</tr>
<tr>
<td>I/II degree laceration</td>
</tr>
<tr>
<td>III/IV degree laceration</td>
</tr>
<tr>
<td>All others</td>
</tr>
</tbody>
</table>
Position of woman - 2\textsuperscript{nd} stage of labour


Upright or lateral versus supine or lithotomy

(20 studies but ? quality)

After upright or lateral position:

- Reduction in second stage
- Fewer episiotomies
- Increase in second degree tears
- No increase in 3\textsuperscript{rd} and 4\textsuperscript{th} degree tears
Birth seat
Thies-Lagergren L et al 2011

- RCT
- Nulliparous (n=1002)
- Birth seat vs No seat
- No difference
  - instrumental deliveries
  - tears or episiotomy
Pushing method
Fraser W et al Am J Obstet Gynecol 2000

PEOPLE RCT (n=1862) comparing:

- Group 1: Early pushing in second stage
- Group 2: Directed pushing after 2 hours

- Delayed pushing was associated with fewer difficult deliveries
- Frequency of episiotomy and 3rd/4th degree tears did not differ
Pushing method

Fitzpatrick M et al BJOG 2002

RCT (n= 179) primips + epidural comparing:

- Group 1: Early pushing in second stage
- Group 2: Pushing after 1 hour

Frequency of episiotomy, instrumental delivery, 3\textsuperscript{rd}/4\textsuperscript{th} degree tears, faecal incontinence, anal sphincter defects and neurophysiology did not differ
Perineal techniques during the second stage of labour for reducing perineal trauma

Aasheim V et al Cochrane Review 2011

- Warm compresses versus control (hands off or no warm compress)
- Hands off (or poised) versus hands on
- Massage versus control (hands off or care as usual)
- Ritgens manoeuvre versus standard care
Perineal techniques during the second stage of labour for reducing perineal trauma

Aasheim V et al Cochrane Review 2011

Outcome measures

- Intact perineum
- Episiotomy
- 3rd and 4th degree tears
Perineal techniques during the second stage of labour for reducing perineal trauma

Aasheim V et al Cochrane Review 2011

- Hands off (or poised) versus hands on
- Ritgens manoeuvre versus standard care

No difference in intervention
### Analysis 2.1. Comparison 2 Warm compresses versus control (hands off or no warm compress), Outcome 1 3\textsuperscript{rd} or 4\textsuperscript{th} degree tears.

**Review:** Perineal techniques during the second stage of labour for reducing perineal trauma

**Comparison:** 2 Warm compresses versus control (hands off or no warm compress)

**Outcome:** 1 3\textsuperscript{rd} or 4\textsuperscript{th} degree tears

<table>
<thead>
<tr>
<th>Study or subgroup</th>
<th>Warm compress</th>
<th>Control</th>
<th>Risk Ratio</th>
<th>Weight</th>
<th>Risk Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n/N</td>
<td>n/N</td>
<td>M-H, Random, 95% CI</td>
<td></td>
<td>M-H, Random, 95% CI</td>
</tr>
<tr>
<td>Albers 2005</td>
<td>3/404</td>
<td>6/404</td>
<td></td>
<td>15.9 %</td>
<td>0.50 [ 0.13, 1.99 ]</td>
</tr>
<tr>
<td>Dahlen 2007</td>
<td>15/360</td>
<td>31/357</td>
<td></td>
<td>84.1 %</td>
<td>0.48 [ 0.26, 0.87 ]</td>
</tr>
<tr>
<td><strong>Total (95% CI)</strong></td>
<td>764</td>
<td>761</td>
<td></td>
<td>100.0 %</td>
<td>0.48 [ 0.28, 0.84 ]</td>
</tr>
</tbody>
</table>

**Total events:** 18 (Warm compress), 37 (Control)

**Heterogeneity:** $\tau^2 = 0.0$, $\text{Chi}^2 = 0.00$, df = 1 ($P = 0.96$); $I^2 = 0.0\%$

**Test for overall effect:** $Z = 2.60$ ($P = 0.0094$)

**Test for subgroup differences:** Not applicable
Perineal techniques during the second stage of labour for reducing perineal trauma

Aasheim V et al Cochrane Review 2011

Analysis 3.1. Comparison 3 Massage versus control (hands off or care as usual), Outcome 1 3rd or 4th degree tears.

Review: Perineal techniques during the second stage of labour for reducing perineal trauma

Comparison: 3 Massage versus control (hands off or care as usual)

Outcome: 1 3rd or 4th degree tears

<table>
<thead>
<tr>
<th>Study or subgroup</th>
<th>Massage n/N</th>
<th>Control n/N</th>
<th>Risk Ratio M-H, Random, 95% CI</th>
<th>Weight</th>
<th>Risk Ratio M-H, Random, 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albers 2005</td>
<td>5/403</td>
<td>6/404</td>
<td></td>
<td>25.2 %</td>
<td>0.84 [0.26, 2.72]</td>
</tr>
<tr>
<td>Stamp 2001</td>
<td>12/708</td>
<td>24/632</td>
<td></td>
<td>74.8 %</td>
<td>0.45 [0.23, 0.89]</td>
</tr>
<tr>
<td>Total (95% CI)</td>
<td>1111</td>
<td>1036</td>
<td></td>
<td>100.0 %</td>
<td>0.52 [0.29, 0.94]</td>
</tr>
</tbody>
</table>

Total events: 17 (Massage), 30 (Control)
Heterogeneity: Tau² = 0.0; Chi² = 0.81, df = 1 (P = 0.37); I² = 0.0%
Test for overall effect: Z = 2.15 (P = 0.032)
Test for subgroup differences: Not applicable
Conclusion

- Various methods available to reduce perineal trauma
- However, it cannot be entirely prevented
- It can be minimised
- Must be recognised and repaired