



Antenatal and Postpartum Pelvic Floor Muscle Training in prevention of UI

W11, 29 August 2011 09:00 - 12:00

Start	End	Topic	Speakers
09:00	09:30	Risk factors of birth injuries to the pelvic floor	<ul style="list-style-type: none"> • Wael Agur
09:30	10:00	Evidence for PFMT during pregnancy and after childbirth	<ul style="list-style-type: none"> • Siv Mørkved
10:00	10:30	Mini pelvic floor muscle training class	<ul style="list-style-type: none"> • Kari Bø
10:30	11:00	Break	None
11:00	11:20	Which women exercise the pelvic floor muscles during pregnancy and after childbirth?	<ul style="list-style-type: none"> • Kari Bø
11:20	11:40	Adherence strategies in promotion of PFMT during pregnancy and after childbirth	<ul style="list-style-type: none"> • Siv Mørkved
11:40	12:00	Challenges in development and implementation of clinical guidelines	<ul style="list-style-type: none"> • Bary Berghmans

Aims of course/workshop

The aim of the workshop is to give evidence for the use of pelvic floor muscle training in prevention and treatment of urinary incontinence during pregnancy and after childbirth and to discuss possible strategies to improve adherence and implementation of pelvic floor muscle training for women.

Educational Objectives

This is a workshop/educational course and, we have run this as an educational course for several years now. The course has been given high scores on evaluation. The course is strictly based on updated evidence for pelvic floor muscle training during pregnancy and after childbirth, with a focus on challenges of implementation of research into practice. The workshop also contain a mini pelvic floor muscle exercise class to link to clinical practice. The class has been/is used in several randomized clinical trials and has been proven to be effective. We find that although we have evidence from high quality RCTs and systematic reviews clinical practice is not updated in this area and the health services are not necessarily following the evidence. It is important to have this arena at the ICS to discuss the evidence and challenges in a multidisciplinary fora.

Workshop W11: ANTENATAL AND POSTPARTUM PELVIC FLOOR MUSCLE TRAINING IN PREVENTION OF UI

Chair: Kari Bø

Childbirth Injuries and the Pelvic Floor

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Some women suffer significant trauma to pelvic floor structures as a consequence of vaginal childbirth. Such trauma affects the levator ani muscle complex, the anal sphincter, pelvic fascial supports as well as the pudendal nerve¹. Symptoms usually present 2-3 decades following the first vaginal delivery². Approximately 40% of primiparous women experience urinary incontinence (UI) during pregnancy and 15% develop new symptoms after delivery³. It seems the more difficult a delivery (particularly if instrumental) the more likely there is damage to pelvic floor structures.

Women who are asymptomatic during pregnancy and delivered by Caesarean section, have the lowest risk of postnatal UI⁴. However, elective Caesarean section has not been shown to be completely protective against pelvic floor dysfunction suggesting an important role of the changes that occur during pregnancy as well as during childbirth. Antenatal stress incontinence is likely to be due to mechanical as well as hormonal effects of the pregnancy. Women with antenatal stress incontinence are likely to represent an at-risk group for developing postnatal stress incontinence that develops as a result of direct (urethral support) and/or indirect (pudendal nerve) childbirth-related damage to the pelvic structures.

Risk factors for damage resulting in UI have been described in various reports and include delivery mode, a long second stage, malposition of the fetal head, epidural anaesthesia and macrosomia⁵. Ultrasound and MRI scanning have been used to demonstrate the postpartum levator defects associated with the development of pelvic floor dysfunction⁶. Levator ani trauma has been found in 15–35% of vaginally parous women^{7,8} and has been shown to be a strong risk factor for pelvic floor dysfunction later in life^{9,10}. A prolonged second stage and the use of forceps during a woman's first delivery were found to be associated with the presence of levator trauma (avulsion and distension) 4 months postpartum while epidural anaesthesia seems to be protective¹¹. Four-dimensional ultrasound scan has been used to identify the presence of levator avulsion following spontaneous and operative delivery¹¹ and also the changes in the hiatal area during pelvic floor muscle contractions¹².

Supervised antenatal and postnatal pelvic floor muscle training has been shown to be protective against UI^{13,14}, particularly in high-risk groups¹⁵. Antenatal pelvic floor muscle training was proven not to affect the mode of delivery as once thought^{16,17}. However, this beneficial effect did not continue on the long term^{18,19} and novel interventions²⁰ to improve motivation and adherence are required to achieve better long-term outcome.

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OVERVIEW OF EVIDENCE FOR PELVIC FLOOR MUSCLE TRAINING IN THE PREVENTION AND TREATMENT OF PRE- AND POSTNATAL URINARY INCONTINENCE

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Female urinary incontinence is often considered a problem primarily occurring during pregnancy and after childbirth. The aim of this presentation is to review the literature addressing pelvic floor muscle (PFM) training in the prevention and treatment of pre and postnatal urinary incontinence. All the controlled studies included in the presentation have been published as articles or conference abstracts.

Seven RCT's (1-7) and two long term follow up (8,9) studies were identified addressing pelvic floor muscle exercises DURING PREGNANCY to PREVENT urinary incontinence (UI) including both women with and without UI.

Two RCTs (10,11) were found which reported effect of pelvic floor muscle exercises DURING PREGNANCY to TREAT UI including only women with UI.

Five studies and in addition long term results from two studies reported. pelvic floor muscle exercises AFTER DELIVERY to PREVENT urinary incontinence (12-18). The studies included both women with and without urinary incontinence. Two were RCT's, one a nested RCT, one a quasi randomised study and one a matched controlled study.

The effect of pelvic floor muscle exercises AFTER DELIVERY to TREAT urinary incontinence was addressed in three RCT's (19-21), and two follow up studies (22,23).

According to the results of the presented review, PFM training during pregnancy and postpartum is effective in reducing urinary incontinence during pregnancy and in the immediate postpartum period. However, the longer term effect is questionable. No adverse effect of the PFM training has been reported. It seems like the interventions including close follow up (monthly and weekly) by a physiotherapist have the best effect. However, methodological differences and differences in adherence to the training protocols make it difficult to compare between studies and to conclude which training regimen is the most effective.

In the following, the exercise course used in our studies will be presented as an example of an effective protocol to treat and prevent urinary incontinence.

In our studies the training groups followed a specially designed weekly exercise course that included both PFM and general exercises. The groups were lead by a skilled physiotherapist, and each session lasted 45-60 minutes. The PFM training was performed in lying, sitting, kneeling, and standing positions with legs apart to emphasise specific strength training of the PFM and relaxation of other muscles. Between each session of PFM training, general exercises were performed to music. The physiotherapist encouraged the women to perform near maximal PFM contractions, and to hold the contraction 6-8 seconds. At the end of each contraction, the women were asked to add 3-4 fast contractions. The resting period was about 6 seconds. In addition, the women performed 2-3 sets of 10 equally intensive PFM contractions per day at home. The physiotherapists focused strongly on motivation. The PFM training protocol has previously been published by Bø et al. (24) following recommendations for general training to increase strength of skeletal muscles. The training groups included 5-15 women, and the training period in the postpartum training groups was 8 weeks and in pregnant women 12 weeks. Adherence to the training protocol was verified by the participants' training diary and from reports from the physiotherapists who were responsible for the group training.

Conclusions/Implications: This review suggests that women should be encouraged to perform PFM training to prevent and/or treat urinary incontinence during pregnancy and postpartum. Health services for women during pregnancy and after delivery should be increased, and strategies to prevent and treat urinary incontinence need to be implemented.

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ADHERENCE STRATEGIES IN PROMOTION OF PELVIC FLOOR MUSCLE TRAINING

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The efficacy of a training program is highly dependent of the adherence to the program. Poor adherence to pelvic floor exercise regimens can act as an additional barrier to health professional intervention. In prevention and treatment of urinary incontinence one important part of the physiotherapist's role is to motivate the patient to follow the pelvic floor muscle (PFM) training protocol. Thus, when designing an intervention adherence strategies must be implemented.

Aims of the presentation:

- What is adherence?
- Why discuss adherence?
- Theoretical issues
- Adherence strategies
- How can adherence strategies be used to promote pelvic floor muscle training?
- Clinical recommendations

Adherence

- ..the extent to which patients follow the instructions they are given for prescribed treatments...

Main points emphasized by the presented theories

(Chiarelli 2007. In: Bø, Bergmans, Mørkved and Van Kampen 2007):

- Knowledge and beliefs about health
 - While advocating health education, all theories emphasize the role of individualization – personalizing the information so that it is seen by individuals as relevant and pertinent
- A patient's belief in their own ability to do what is asked.
 - Exploring the patient's feelings of competency in relation to the behaviour and encouraging repeated, well-supervised practice to improve self efficacy and self-esteem
- The importance of what is perceived as "normal" by a patient in relation to the influences and values of their social group.
 - The influence of the patient's social group as a role model, family and peer influences (significant others)
- Patients move forward and back along a continuum of change or readiness to change
- Awareness of the impact of socioeconomic and environmental factors on a patient's ability to adopt specific behaviours
- The importance of changing a patient's environment or perceptions of the environment when it impacts on their progress

Adherence strategies / Theories to provide insight in how to change behaviour:

- The trans-theoretical model (TTM)
- The self-regulation theory (SRT)
- The Social cognitive theory (SCT)

How can adherence strategies be used to promote pelvic floor muscle training?

A physiotherapy continence promotion program designed and implemented in Australia was developed with input from both women in postpartum and experts in continence management. The program has been shown to be effective both in encouraging pelvic floor muscle exercises and in promoting continence.

Another example of a PFM training program has been used in controlled studies aiming at prevention and treatment of urinary incontinence in pregnant and postpartum women in Norway. Adherence strategies were based on motivational theory, and three categories of personal motivational factors were addressed:

1. Goal-orientation
2. Self efficacy / Outcome expectations
3. Opinions and emotional experiences related to physical activities

In addition, several social factors relevant to improve adherence was addressed:

1. The therapists- patient interactions
2. Follow up by significant others
3. Group relations

The acceptability of a training program by the members of the target group (pregnant and postpartum women with time constraints) also depends on the simplicity and time needed to perform the exercises.

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WHICH WOMEN EXERCISE THE PELVIC FLOOR MUSCLES DURING PREGNANCY AND AFTER CHILDBIRTH?

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A recent Cochrane review (Hay-Smith et al 2008) has concluded that women without prior urinary incontinence (UI) who received intensive antenatal pelvic floor muscle training (PFMT) were 56% less likely than those who received no PFMT to report UI in late pregnancy, and about 30% less likely to report UI by 6 months postpartum. Women with persistent UI 3 months after delivery who received PFMT were 20% less likely than those who did not receive PFMT to report UI 12 months after delivery and women receiving PFMT after delivery were also about half as likely to report fecal incontinence as those who received no PFMT. Given this evidence it is important to find out how many women are doing the exercises and if not, what are the barriers to PFMT.

In general it is well known that only few of those having UI report their symptoms. In a nationwide survey in the US only 45% of those reporting symptoms had talked to the physician about the problem and in 85% of the cases it was the incontinent woman that had raised the issue. Only 20% of the participants reported to do PFMT currently. McLennan et al (2005) found that counseling and information about possible pelvic floor complications occurred significantly less frequently than education on general pregnancy topics in a sample of postpartum women. 46% had not received any information on PFMT. The number of women doing PFMT during pregnancy and postpartum varies in different studies and from country to country. The variation antenatally is between 16 and 69% (Mason et al 2001, Mason et al 2001, Mason et al 2001, Chiarelli et al 2003, Bø et al 2006, Whitford et al 2007, Bø et al 2009). The variation is likely due to different health care systems with different health care professionals having the responsibility (or not!) to teach PFMT. Also the evidence for antenatal training is relatively new, and eg in Australia only 20% had been taught PFMT by a health professional during pregnancy (Chiarelli et al 2003, Chiarelli et al 2004). Mason et al (2001) found that the information in UK varied from a brief reminder, to exercise in a class with an instructor. As expected most studies find that PFMT are more frequent postpartum than antenatally. Mason et al (2001) found that 82% of a group of UK women were doing PFMT 6 weeks postpartum and in a Norwegian study 58% of women were exercising \geq once a week at 6 months postpartum (Bø et al 2007). Whitford et al (2007) reported that 60% still did PFMT 6-12 months after delivery. However, studies may be flawed with low response rates and the true numbers may be lower. Not surprisingly those exercising both during pregnancy and after childbirth are more educated and more likely to participate in regular fitness activities as well.

In conclusion, it is a challenge first of all to health professionals that we have not been able to teach and inform women on the effect of PFMT and why women should start training during pregnancy to prevent and treat UI and fecal incontinence (Ashworth & Hagan 1993). Hence, to date the health care system does not seem to function evidence based in this area. We should therefore not assume that women are not motivated to conduct such exercises. In general pregnant women are motivated for lifestyle changes and this may be the optimal time to introduce PFMT. Today all pregnant women are recommended to do general aerobic and strength training to prevent excessive weight gain, diabetes, high blood pressure, pre-eclampsia and macrosomia (Artal & O'Toole 2003, Wolfe & Davies 2003). Hence, there is a need for general fitness classes both during pregnancy and postpartum for all pregnant women (www.corewellness.co.uk). Such general exercise classes could

easily and should optimally include 3 sets of close to maximum PFM contractions and instruction in precontractions during increase in intra-abdominal pressure (“the Knack”). However, the effect of such exercise classes needs to be evaluated in randomized controlled trials.

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CHALLENGES IN DEVELOPMENT AND IMPLEMENTATION OF CLINICAL GUIDELINES IN CLINICAL PRACTICE

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Nowadays physiotherapy still is facing quality problems in relation to communication and cooperation. Urologists, gynaecologists and surgeons are uncertain about appropriate indications and referrals to physiotherapists. One of the reasons for this is lack of communication and integrated care. Often an appropriate infrastructure for broad implementation and necessary innovation is lacking. Because of lack of knowledge and insight information surgeons demonstrate lack of urgency to change their clinical practice.

One challenging strategy for improving the quality of physiotherapy is to minimize undesirable variability in clinical practice by developing and implementing evidence-based clinical practice guidelines (CPGs).

A useful working definition of CPGs is derived from the Institute of Medicine of the United States Agency for Health Care Policy and Research (AHCPR). CPGs are defined as 'systematically, on the basis of (best) evidence and consensus developed recommendations, drafted by experts, field-tested, and directed at performing diagnostic and therapeutic interventions in persons with definitive, suspected or health-threatening conditions, or directed at areas which have to do with good management and administration of the profession(al)' (Field & Lohr 1992). CPGs are systematically developed statements which assist clinicians and patients in making decisions about appropriate treatment for specific conditions. The idea is that CPGs should be followed unless the individual physiotherapist has a valid and responsible basis for not following the guideline.

The purpose of CPGs on the level of the individual physiotherapist is to assist this professional in making daily decisions and to self evaluate these decisions. The

guidelines need to be applicable in daily clinical practice. On the level of the physiotherapy profession the purpose of CPGs is to increase effectiveness and to explicit and to uniform care. Next to effectiveness efficiency is important, i.e., 'Value for Money'. Development and implementation of physiotherapeutic CPGs need to be clear and transparent also for other related health care professionals and should ultimately be imbedded in multidisciplinary (international) guidelines.

Even well-established CPGs will not contribute to improving quality unless they are imbedded in effective implementation programs (Hendriks et al. 2000). This presentation will outline current knowledge about implementation of CPGs, and translates this knowledge to the field of pelvic floor muscle training during pregnancy and after childbirth. It deals with guideline effectiveness and with the strategies required for implementing CPGs. In general, the provision of explicit CPGs supported by reinforcement strategies will improve physiotherapist's performance and, in certain situations, also patients' health outcomes. Multiple implementation strategies are more likely to be effective than single strategies, and interactive workshops and audit and feedback seem to be the most effective interventions. Interactive strategies serve also to change the individual physiotherapist's behaviour in the constantly altering environment of evidence-based practice. As implementation is expected to occur as a result of interaction between innovators and professionals working in the field, the professional needs to be involved in the process of guidelines development and implementation. Key components of the development of a strategy for implementing CPGs in physiotherapy are the active involvement of physiotherapists in both the development and implementation of guidelines, the use of multiple strategies including interactive strategies and the investigation and reduction of barriers for implementation.

Investigating perceived barriers, and linking these to implementation interventions that have been shown to be effective, is a useful way to obtain insight into the most appropriate implementation strategies.

Lack of knowledge about the potentials of physiotherapeutic preventive intervention of and collaboration with referring gynaecologists, obstetricians, general practitioners and midwives and the expectations of post partum women are important barriers of the implementation of post partum prevention guidelines. Good collaboration is vital to ensure consistency across professions and to provide optimal quality of care. Changing the expectations of post partum women ('my baby is important, not me!!') may take some time, physiotherapist's effort, information and education, because up to now most post partum women may have received traditional (lack of) care. It is the responsibility of the physiotherapist, as a professional, to provide good quality information, education and intervention, like Morkved's group training program (Morkved 2003), but in order to do so it may be necessary to try to change the expectations of the post partum women. Because physiotherapists have difficulties changing post partum women's expectations, learning how to deal with expectations that are not consistent with the guidelines is an important part of the implementation strategy (Berghmans et al, 2007).

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