

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/285413803>

Comment on- The effect of uterine fundal pressure on the duration of the second stage of labor- A randomized controlled trial

Data · December 2015

CITATIONS

0

READS

84

4 authors, including:



Johanna M A Pijnenborg

Radboud University Medical Centre (Radboudumc)

133 PUBLICATIONS 990 CITATIONS

[SEE PROFILE](#)



Olus Api

Yeditepe University

55 PUBLICATIONS 536 CITATIONS

[SEE PROFILE](#)



Murat Api

Istanbul Medipol University

183 PUBLICATIONS 707 CITATIONS

[SEE PROFILE](#)

Some of the authors of this publication are also working on these related projects:



thesis 'Predictive markers for recurrent endometrial carcinoma' [View project](#)



Fetal DNA [View project](#)

LETTERS TO THE EDITOR

Comment on: The effect of uterine fundal pressure on the duration of the second stage of labor: A randomized controlled trial

Sir,

Api et al. published a very interesting, randomized controlled trial about the effect of manual uterine fundal pressure on the duration of the second stage of labor. A total of 197 women were randomized between fundal pressure concomitant with each uterine contraction and normal pushing during second stage. The authors concluded that fundal pressure was ineffective in shortening the second stage of labor (1).

Merhi et al. concluded in their review that the role of fundal pressure is understudied and remains controversial in the management of the second stage of labor. Moreover, they stated that caution should be exercised using this maneuver until it is proven to be safe and effective (2).

Although the study was well designed, we feel that there are some concerns about the interpretation of the data. As already mentioned by the authors, there was a significant difference in nulliparity between the study and control group. Since the second stage of labor is significantly shorter in multiparous women, we feel that the advantages of shortening of second stage would be more relevant in nulliparous women. Unfortunately the study was underpowered to detect difference in second stage in this subgroup of nulliparous women. Moreover, we wonder if the duration of this second stage of labor should be the primary outcome? In clinical practice, fundal pressure is mainly used to terminate the second stage in order to prevent instrumental delivery in cases of fetal distress.

Furthermore, the authors described a clear definition of the maneuver, although there is a restriction regarding the non-standardized procedure as used for applying fundal pressure without control of force which is applied on the fundal area. Standardized fundal pressure was described by Cox et al., who used an inflatable belt to control the level of force on the surface area (3). Shortcoming of this method is

the lack of a force vector. Therefore, Buhimschi et al. applied fundal pressure on a semi-inflated pressure cuff interposed between the investigator's hand and the abdominal wall. In this way the pressure was constantly maintained at the same level in all patients (4).

Finally, the trial by Api et al. described no differences in the rate of severe maternal morbidity, neonatal trauma, admission to neonatal care unit, and neonatal death between both groups. Unfortunately the authors do not give numbers of these adverse outcomes, including severe perineal laceration. Matsuo et al. described a higher incidence of severe perineal laceration in the group of fundal pressure, although this could be a reflection of an abnormal labor instead of the use of fundal pressure itself (5).

The contribution of the trial by Api et al. is important for further studies regarding fundal pressure. So far, alternative management strategies in the second stage of labor must and should be considered whenever possible. The specified role of fundal pressure is understudied and still remains controversial in the management of the second stage of labor and would be interesting especially in nulliparous women with fetal distress.

*Philippus H.J. Hoogsteder¹ and
Johanna M.A. Pijnenborg²*

¹Department of Obstetrics and Gynaecology, Maastricht University Medical Centre, Maastricht, The Netherlands, ²Department of Obstetrics and Gynaecology, TweeSteden Hospital, Tilburg, The Netherlands

Address for correspondence

Philippus H.J. Hoogsteder
Department Obstetrics and Gynaecology,
Maastricht University Medical Centre
P.O. Box 5800, 6202 AZ Maastricht
The Netherlands
E-mail: p.hoogsteder@og.unimaas.nl

References

1. Api O, Balcin ME, Ugurel V, Api M, Turan C, Unal O. The effect of uterine fundal pressure on the duration of the second stage of labor: a randomized controlled trial. *Acta Obstet Gynecol Scand.* 2009;88:320–4.
2. Merhi ZO, Awonuga AO. The role of uterine fundal pressure in the management of the second stage of labor: a reappraisal. *Obstet Gynecol Survey.* 2005;60:599–603.
3. Cox J, Cotzias CS, Siakpere O, Osuagwu FI, Holmes EP, Paterson-Brown S. Does an inflatable obstetric belt facilitate spontaneous vaginal delivery in nulliparae with epidural analgesia. *Br J Obstet Gynaecol.* 1999;106:1280–6.
4. Buhimschi CS, Buhimschi IA, Malinow AM, Kopelman JN, Weiner CP. The effect of fundal pressure manoeuvre on intrauterine pressure in the second stage of labour. *BJOG.* 2002;109:520–6.
5. Matsuo K, Shiki Y, Yamasaki M, Shimoya K. Use of uterine fundal pressure maneuver at vaginal delivery and risk of severe perineal laceration. *Arch Gynecol Obstet.* 2009 Mar. [Epub ahead of print] DOI-number 10.1007/s00404-009-1015-2

REPLY

Uterine fundal pressure and duration of the second stage of labor: A randomized controlled trial

Sir,

We appreciate Drs. Hoogsteder and Pijnenborg's interest in our article. However, we would like to clarify a few of their concerns regarding our study and interpretations that may derive thereof.

Although the parity distribution was heterogeneous, our study was not conducted to evaluate the effect of fundal pressure on the duration of the second stage in separate groups of nulliparous or multiparous women; yet the subgroup analysis according to parity revealed no statistically significant difference between the study and control groups. Nevertheless, our study was not powered enough to assess that effect. Finally, our randomized controlled trial pointed out that fundal pressure seems to be ineffective in shortening the second stage of labor (1).

We disagree with Drs. Hoogsteder and Pijnenborg's comment related to the primary outcome of the trial. According to them, fundal pressure is mainly used to terminate the second stage, in order to prevent instrumental delivery in cases of fetal distress. It would be inappropriate to compare the effect of instrumental delivery which is recommended by many respectful authorities in prolonged second stage or suspected fetal compromise with the effect of fundal pressure in fetal distress where the specified role is understudied and still remains controversial (1–4). Until the efficacy of the fundal pressure is proven to shorten the second stage of labor, it is irrational and unethical to design such a comparative

study evaluating the efficacy of instrumental delivery and uterine fundal pressure in cases of fetal distress. Since fetal distress is a serious condition, the currently indicated methods, namely cesarean section or instrumental delivery, must be applied; otherwise the consequences could be catastrophic.

Although we appreciate the authors' concern about the lack of standardization of the force used during fundal pressure in our study, the techniques described by other authors were also not fully standardized (5,6). It is very difficult to describe a standard technique because the application of such a method has a lot of variation by its nature. Neither interposed cuff nor measurement of intrauterine pressure are validated methods for standardization of fundal pressure. Due to confounders, such as fetal position, amniotic fluid volume, soft tissue, and bony structure of the pelvis and birth canal, vector of the applied pressure, abdominal location of the applicant's hand, maternal body mass, abdominal girth, the degree of lumbar lordosis, maternal concomitant pushing-down efforts – the applied force during the fundal pressure maneuver cannot be controlled or homogenized.

On the other hand, we found no differences in the rate of secondary outcomes which were severe maternal morbidity, neonatal trauma, admission to neonatal care unit, neonatal death between the study and control groups. The total number of adverse outcomes in our study was only one (admission to neonatal care unit). Furthermore, since we did not have any patient with severe perineal lacerations, we

did not report the number in our article. However, we reported the rate of episiotomy (mediolateral) in our control and study groups which were 51% and 56%, respectively, with no statistically significant difference. Although Matsuo et al. described a higher incidence of severe perineal laceration in the group of fundal pressure and the risk of severe perineal laceration was synergistically increased with the concurrent use of uterine fundal pressure maneuver with vacuum extraction and episiotomy, these authors did not define if they used midline or mediolateral episiotomy in their retrospective case-control study (7). This issue is important because it is well-known that the use of midline episiotomy is much more commonly associated with severe perineal lacerations including sphincter tears (8). Additionally, we agree with the Drs. Hoogsteder and Pijnenborg's comment that the higher incidence of severe perineal laceration in the group of fundal pressure could be a reflection of an abnormal labor instead of the use of fundal pressure itself.

Finally, the aim of our study was to determine if the use of uterine fundal pressure was really effective for shortening the second stage of labor. Since the data related to this very debatable maneuver, which is used commonly in delivery wards all around the world, are very limited, we believe that there is an urgent need for further prospective, randomized, trials with larger sample sizes to re-evaluate its efficacy and safety.

*Olus Api*¹ and *Murat Api*²

¹Department of Obstetrics & Gynecology,
Dr. Lutfi Kirdar Kartal Teaching and Research
Hospital, Istanbul, Turkey

²Department of Obstetrics & Gynecology,
Haseki Education and Research Hospital,
Istanbul, Turkey

Address for correspondence

Olus Api
Department of Obstetrics and Gynecology
Dr. Lutfi Kirdar Kartal Teaching and
Research Hospital
E-5 Road, 34890 Cevizli
Istanbul, Turkey
E-mail: olusapi506@hotmail.com

References

1. Api O, Balcin ME, Ugurel V, Api M, Turan C, Unal O. The effect of uterine fundal pressure on the duration of the second stage of labor: a randomized controlled trial. *Acta Obstet Gynecol Scand.* 2009;88:320-4.
2. American College of Obstetricians and Gynecologists. Operative vaginal delivery. ACOG practice bulletin number 17. Washington, DC: American College of Obstetricians and Gynecologists; 2000.
3. Royal College of Obstetricians and Gynaecologists Guidelines and Audit Committee. RCOG Clinical Green Top Guidelines. Instrumental Vaginal Delivery No. 26.
4. The Royal Australian and New Zealand College of Obstetricians and Gynaecologists. College Statement. Instrumental vaginal delivery Statement No: C-Obs 16, November 2006.
5. Cox J, Cotzias CS, Siakpere O, Osuagwu FI, Holmes EP, Paterson-Brown S. Does an inflatable obstetric belt facilitate spontaneous vaginal delivery in nulliparae with epidural analgesia. *Br J Obstet Gynaecol.* 1999;106:1280-6.
6. Buhimschi CS, Buhimschi IA, Malinow AM, Kopelman JN, Weiner CP. The effect of fundal pressure manoeuvre on intra-uterine pressure in the second stage of labour. *BJOG.* 2002;109:520-6.
7. Matsuo K, Shiki Y, Yamasaki M, Shimoya K. Use of uterine fundal pressure maneuver at vaginal delivery and risk of severe perineal laceration. *Arch Gynecol Obstet.* 2009 Mar 5. [Epub ahead of print].
8. Kudish B, Blackwell S, Mcneeley SG, Bujold E, Kruger M, Hendrix SL, Sokol R. Operative vaginal delivery and midline episiotomy: a bad combination for the perineum. *Am J Obstet Gynecol.* 2006;195:749-54.