Constatnt electronic fetal heart monitoring versus recommendations of the World Health Organisation

Original article

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Summary

Introduction. Progress which took place in obstetrics in scope of the technology caused implementing many new methods of diagnostics which are supposed to provide maximum safety for mother and child in the perinatal period. The aim of cardiocotography is reducing the frequency of damage to the central nervous system of the foetus. However, this procedure became a routine quickly, in spite of the lack of improvement in the neurological condition of newborn babies. It has been stated that constant intranatal cardiocotographic monitoring doesn't bring better perinatal results than periodic sounding of the fetal heart activity.

Aim. Getting the doctors' opinion on the procedure of constant electronic fetal heart monitoring during the natural childbirth.

Material and methods. A survey was held among obstetricians (n=160) from the Silesian voivodeship and maternity ward patients (n=200). A comparative analysis of doctors' opinion and data from patients considering the frequency of constant electronic fetal heart monitoring during natural childbirth has been made. The research material was analyzed according to the doctors' work experience and place of work. The findings were objected to statistical analysis. Student's t-test and chi-square test with Yates' amendment were used. The materiality level $p<0,05$ was assumed. *Main outcome measures:* Providing data concerning implementation of the WHO recommendation on constant electronic fetal heart monitoring.

Results. Most of the doctors (78,8%) share the opinion that electronic fetal heart monitoring during natural childbirth should be performed periodically, while 21,2% think it should be performed constantly. According to patients, in 65,5% cases electronic fetal heart monitoring during labor was performed periodically, and in 34,5% cases in a constant way. In the assessment of the procedure realization, a statistically important difference was noted. Obstetricians express the opinion that electronic fetal heart monitoring should be performed constantly much less frequently than it is actually performed.

Conclusions. Electronic fetal heart monitoring during natural childbirth is still a frequently applied method. It is necessary to implement this procedure only in cases which are medically justified.

Key words: natural childbirth; condition of the foetus; cardiocotography

INTRODUCTION

Electronic fetal heart monitoring was introduced at the turn of seventies and eighties of the 20th century. The aim of cardiocotography (CTG) is reducing the frequency of damage to the central nervous system of the foetus. However, this procedure became a routine quickly, in spite of the lack of improvement in the neurological condition of newborn babies. It has been stated that constant intranatal cardiocotographic monitoring doesn't bring better perinatal results than periodic sounding of the fetal heart activity. Currently CTG is one of the most frequent procedures in obstetrics [1-7].

According to the World Health Organization's and Ministry of National Health's recommendations concerning perinatal care fetal condition monitoring with cardiocotograph should be performed only in medically justified cases related to the risk of perinatal death and induced childbirths [8,9]. Yet cardiocotography is still the main metod od intranatal monitoring of the fetuses threatened by asphyxia. This is the reason for more and more frequent performance of the short CTG monitoring at admission of all women in labor as well as constant intranatal cardiocotographic monitoring. Electronic fetal monitoring provides safety of vital parameters control. The technologies available and used nowadays disturb the natural childbirth. It has been found that constant electronic fetus monitoring is a procedure which prevents a woman I labor from moving, thus being uncomfortable and making it difficult to concentrate on labor itself. Recumbency may also influence the level of pain. Usefulness of electronic fetal heart monitoring has been found in case of induced and premature childbirths and high risk pregnancies to verify fetal heart disturbances found by auscultation [10,11].

AIM

The aim of the paper was getting the obstetricians' opinion on the procedure of constant electronic fetal heart monitoring during the natural childbirth and making a comparative analysis with data on frequency of this procedure collected from women in labor.

MATERIAL AND METHODS

A survey was held among 160 obstetricians working in research hospitals and municipal hospitals of the Silesian voivodeship and 200 women in childbed, patients of the obstetrics wards. The research was carried out from October 2011 to November 2012. The research tool was a survey prepared in a version for obstetricians and a version for women in childbed. 360 surveys, which were completely filled, were objected to statistical analysis. The research material was analyzed according to doctors' work experience (1st group <10 years, 2nd group 11-20 years, 3rd group 21-30 years, 4th group >30 years) and their workplace (I – municipal hospital, II – research hospital).

The survey was filled by an obstetrician or by a patient after natural childbirth, the aim of the research and way of answering being formerly explained and consent obtained. Survey was voluntary and anonymous. The survey data was collected in Exel spreadsheet and then transferred to Statistica PL, in which statistical calculations were made. To compare the two goups Student t-test for independent variables was used. Frequency of answers to particular questions was calculated. The statistical calculations were made with the use of chi-square test with Yates' amendment were used. The materiality level $p<0,05$ was assumed.

RESULTS

The age of doctors surveyed was in 27 – 65 bracket, with the average of 45,0 (SD±8,9). Work experience was 2-40 years, with the average of 19,7 (SD±9,6). 47 (29,4%) doctors worked in research hospitals and 113 (70,6%) in municipal hospitals. The age of women in childbed was in 18-40 bracket, with the average of 29,2 (SD±4,6). Women with higher education degree were in majority (48,5%), 39,5% had secondary education and 12% had vocational education.

A decided majority of doctors (78,8%) share the opinion that electronic fetal heart monitoring during natural childbirth should be performed periodically, while 21,2% think it should be performed constantly (Tab.1.)

Analysis of doctors' opinions in different experience groups concerning electronic fetal condition monitoring during natural childbirth shows that it should be performed periodically according to majority of them (Tab.2.).

Differences observed are not statistically meaningful ($p> 0,05$).

Tab. 1. Electronic monitoring of fetus condition during natural childbirth in obstetricians' opinion

Electronic monitoring of fetus	N	%
Periodically	126	78,8%
Constantly	34	21,2%

Tab. 2. Electronic fetal condition monitoring during natural childbirth and obstetricians' work experience

Electronic monitoring of fetus	Work experience [years]				p
	< 10	11–20	21–30	> 30	
Periodically	72,7%	78,2%	73,6%	73,7%	NS
Constantly	27,3%	21,8%	26,4%	26,3%	

Analysis of doctors' opinions, considering the place of work, show that majority of both obstetricians working in research hospitals and municipal hospitals state that electronic fetal condition monitoring during natural childbirth should be performed periodically (Fig.1.).

Differences observed are not statistically meaningful (p> 0,05).

Analysis of the data concerning electronic fetal condition monitoring during natural childbirth received from women in childbed has shown that in 65,5% of the surveyed the procedure was performed periodically and in 34,5% cases constantly (Tab.3.).

The comparative analysis of obstetricians' opinion on performing constant electronic fetal heart monitoring in natural childbirth and patients' statements about the procedure during childbirth has shown statistically significant difference (Fig.2.). Obstetricians much less frequently (21,2%) express opinion that electronic fetal condition monitoring should be performed constantly than it is in fact performed during childbirth (34,5%).

DISCUSSION

According to WHO, the aim of care during natural childbirth is assuring good condition of mother and child with the smallest possible usage of medical intervention [12]. Introduction of new techniques, such as cardiocotography must not cause excessive medicalization of childbirth.

The need for electronic constant fetus monitoring during natural childbirth was subjected to analysis. Research has shown that 78,8% of obstetricians think that electronic fetal condition monitoring during natural childbirth should be performed periodically, while 21,2% state that it should be performed constantly. Analysis of data from women in childbed has shown that periodic electronic fetus monitoring during natu-

Tab. 3. Electronic fetal condition monitoring during natural childbirth

Electronic monitoring of fetus	N	%
Periodically	131	65,5%
Constantly	69	34,5%

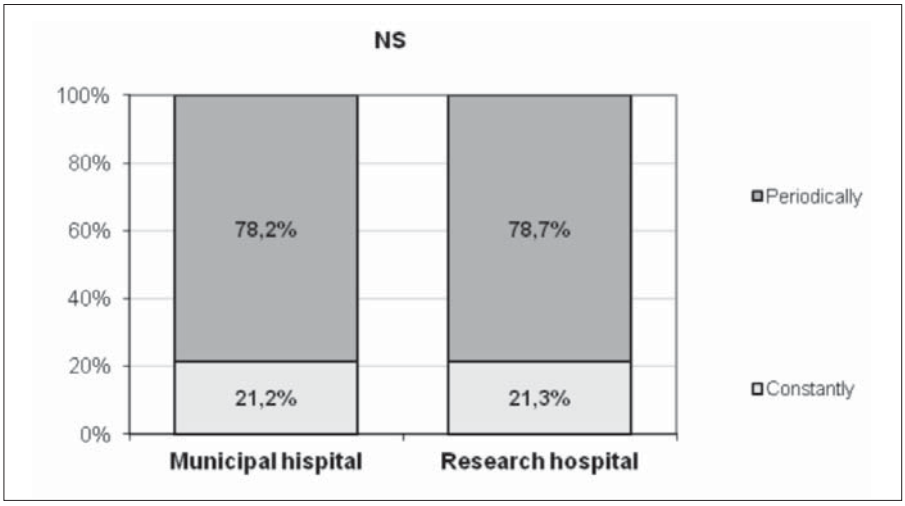

Fig. 1. Electronic fetal condition monitoring during natural childbirth and obstetricians' place of work

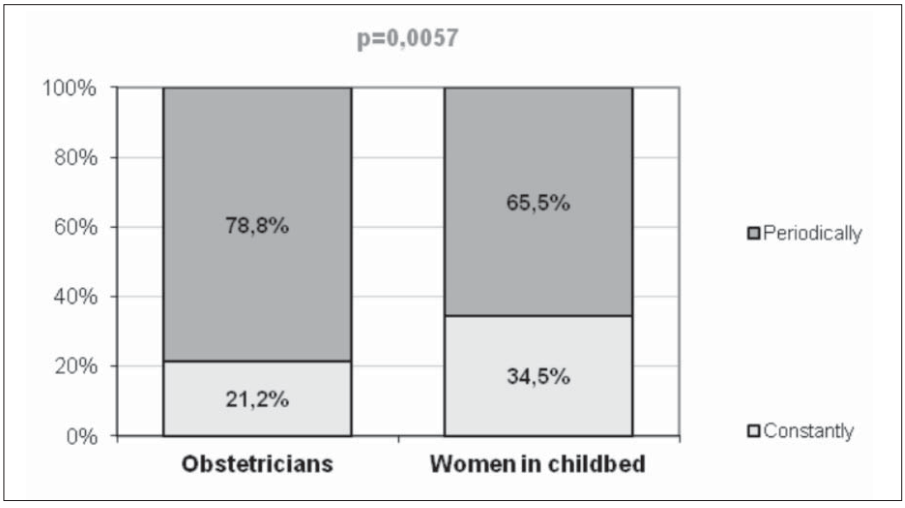

Fig. 2. Electronic fetal heart monitoring in natural childbirth according to obstetricians and women in childbed

ral childbirth was performed in 65,5% of the surveyed, while 34,5% were monitored constantly.

Strengths and limitations

The asset of the paper is obtaining the opinion of obstetricians on using constant electronic fetal heart monitoring during physiological labour and an attempt to change obstetricians' behaviour according to WHO recommendations and therefore improving the quality of care of a woman in labour.

The number of obstetricians and patients after physiological labour can be a limitation of the work. Conducting the research at the whole territory of Poland will enable to make the results reliable.

Interpretation

Impey et al. show that routine cardiocotographic examinations performed in every women in childbed at the moment of admission to labor ward have no prognostic significance and cause no health improvement in newborns compared to group of women in case of whom the cardiocotographic diagnosis was not applied [4].

"Rodzić po ludzku" campaign research findings (2006) state that percentage of electronic constant fetus monitoring during natural childbirth amounted to 30% in Poland [13]. Author's own research show a similar frequency of this procedure.

In the analyzed material it has been noticed that obstetricians significantly less frequently (21,2%) think that electronic fetus monitoring during natural childbirth should be performed constantly compared to data concerning this procedure obtained from women in childbed. Taking into account that women in childbed have no significant reason for giving unreal information for statistics, the difference in the findings should be considered. The reason for this difference might be wrong qualification of the procedure by women in childbed and reducing the use of electronic fetus monitoring to preventatively justified cases.

Modern technologies have been introduced in obstetrics in order to deliver complicated childbirths safely. It must be remembered that electronic constant fetus monitoring prevents women from moving, which may in result disturb the natural childbirth. Excessive use of electronic devices accounts to rise of medical interventions frequency, especially caesarean section and surgical delivery [4,14].

CONCLUSION

1. Electronic constant fetal heart monitoring during natural childbirth is still a frequently performed method. It is necessary to implement this procedure only in cases which are medically justified.
2. Work experience and place of work do not significantly influence the obstetricians' opinion on electronic constant fetus monitoring during natural childbirth.
3. There is a need to inform women in childbed about the reason for electronic constant fetus monitoring during natural childbirth.

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