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Labour epidural analgesia in Poland in 2009 — a survey

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Abstract

Background. Labour analgesia in most developed countries is funded by state, available to every woman in labour and plays an important role in everyday activities of most anaesthetists. This paper presents second part of an Obstetric Anaesthesia Survey which was conducted in 2009. First part of the Survey relating to anaesthesia for cesarean section was published in 2010.

Methods. Author sent 432 questionnaires with questions about hospital size and location, staffing levels and numbers of deliveries per year. There were also questions regarding regional and other pain relief methods used in labour, ways of administration, drugs used and monitoring of patients.

Results. Response rate was 24%. There were around 45% hospitals with 1 to 3 deliveries per year which makes it difficult to provide separate obstetric anaesthetic cover. Only 10 hospitals (11%) employ anaesthetist for labour ward. Epidural analgesia was used in 55% hospitals but only 20% provide the service 24 hour per day and free of charge. Entonox was used very occasionally, most common way of pain relief was pethidine injection. There were marked differences in medication used for labour epidural with 18% of units using high concentrations of local anaesthetics which could result in motor block. Despite lack of regulations in Polish law and proper training in 50% of units midwifes were looking after the patients with established labour epidural which could create medico-legal consequences. There was also marked variation in parameters monitored during labour analgesia.

Conclusion. Epidural labour analgesia was offered 24 hour per day and free of charge only in 20% of hospitals. Without media pressure it will be difficult to get more funding from National Health Fund (NFZ) to enable other hospitals especially with small obstetric units to introduce regional labour analgesia. Although 2009 guidelines addressed majority of issues regarding conduct of epidural labour analgesia, but there are changes in Polish law needed to be made, allowing midwifes to be appropriately trained to look after parturients with regional labour analgesia.

Key words: anaesthesia, obstetric; anaesthetic techniques, labour analgesia, regional, epidural; blockade

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In the majority of developed countries labour epidural analgesia, medically indicated or requested by a patient, constitutes an important element of the anaesthetist's responsibilities and is often state-refunded. In Poland, due to financial and organisational limitations, such as shortages of anaesthetists and midwives or lack of legal regulations allowing a trained midwife to supervise an anaesthetized woman, the availability of labour epidural analgesia is still limited.

The aim of the present study was to determine the availability of labour pain relief, the methods used and the extent of supervision over an anesthetised parturient in Poland.

METHODS

The study was conducted using a questionnaire sent to e-mail addresses of hospital administrators taken from www.rejestrzoz.gov.pl and private e-mail addresses of anaesthetists from the list published on www.polanest.web.pl in January and February 2009. Moreover, the study included telephone survey conducted in February and March 2009. The questionnaires were e-mailed to hospitals with obstetric wards and anaesthetists who declared their willingness to participate in the study. Subsequently, their responses were evaluated using the Open Office Calc spreadsheet and the results were rounded to the nearest full percentage points.

RESULTS

The questionnaires were sent to 398 hospitals and 34 anaesthetists. Seventy-seven responses in written and electronic form were received; 21 were collected by phone. In total, 24% of hospitals responded; 45 questionnaires (46%) were returned from units located in small towns (up to 50 thousand inhabitants), 23 (23%) from medium-size towns (50–100 thousand inhabitants) and 31 (32%) from cities (above 100 thousand inhabitants); including 54 county hospitals (55%), 20 specialist hospitals (20%), 22 regional specialist hospitals (22%) and 2 university hospitals (2%).

In one of the hospitals the number of deliveries was < 500 per year, in 45 (46%) 500-1000, in 32 (33%) 1–200, and in 16 (16%) > 2 000 per year. The question concerning the number of anaesthetists, employed was answered by all but 2 hospitals. The responses were as follows: in 16 hospitals (17%) there were up to 3 anaesthetics, in 24 (25%) — 4 to 5, in 20 (21%) — 6 to 10, in 21 (22%) — 6 to 10, in 19 (20%) — 11 to 15, and in 17 (18%) >15 anaesthetists; however, only in 10 hospitals anaesthetists were exclusively employed at the obstetric wards. Labour epidural analgesia was performed in 54 of hospitals (55%); in 20 of them (37%) — on a 24-hour basis and free of charge, in 15 (28%) — on a 24-hour basis but payment was required, in 12 (22%) — occasionally, and in 5% — only during working hours due to staff shortage. Percentage distribution of hospitals offering labour analgesia is presented in Fig. 1.

In 76 hospitals (77%) the alternative method of labour pain relief was intramuscular pethidine injection, in a few - fentanyl and pentazocine, and in one (regional hospital) — remifentanil patient-controlled analgesia. In one of the hospitals, Entonox was used as well.

From among 54 hospitals providing labour regional analgesia, 47 (87%) administered epidural analgesia, 6 (11%) — epidural or spinal (mainly in the advanced stage of labour) and in 1 hospital (county) apart from the above-mentioned methods, combined spinal-epidural analgesia was used.

Epidural analgesia was most frequently given in the form of a local anaesthetic injections in single doses (42 hospitals — 78%). Infusions were used in 4 hospitals (8%) and infusions and/or single doses in 5 (9%); 5% of hospitals did not provide any information with that respect.

Regional analgesia was performed using a diversity of agents. Isobaric and hyperbaric bupivacaine was administered as follows: 0.0625–0.125% in 41 hospitals (76%), 0.125–0.25% in 6 hospitals (11%) and 0.375% in 1 hospital. Moreover, 0.1–0.2% ropivacaine was administered in 4 hospitals (7%) and 0.2% lidocaine in one hospital.

In 37 hospitals (68%) local anaesthetic was used together with fentanyl (from 2 μg mL^{-1} even to 50–100 μg) and administered with every or every other dose in single injections. In 3 hospitals (5%) sufentanil was used, and in 1 adrenaline was given.

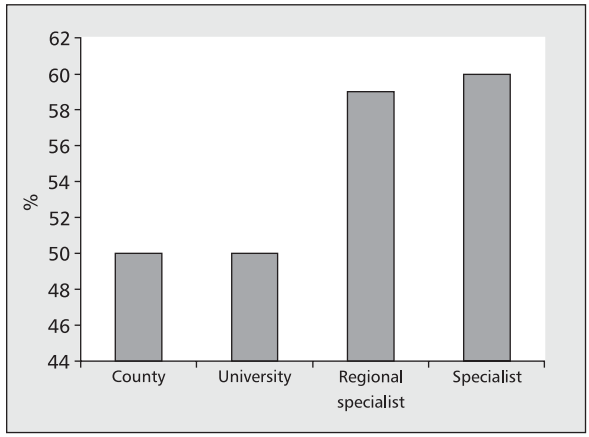

Figure 1. Percentage distribution of hospitals performing labour epidural analgesia

The analysis of questionnaire data showed that parturients were usually supervised during analgesia by midwives (Fig. 2).

Monitoring of vital signs during labour analgesia most commonly included measurements of blood pressure (94% of hospitals), SpO_2 (54%) and ECG (33%). In single cases, routine monitoring involved CTG, E_TCO_2 and VAS-measured severity of pain.

DISCUSSION

The present study is the second part of research on labour analgesia in Polish hospitals based on a survey conducted in 2009. The first part of the project dealing with Caesarean section analgesia was published in 2010 [1]. All necessary documentation had been gathered before "Anaesthesiology Intensive Therapy" published the national guidelines on labour analgesia [2].

In Poland, there are still hospitals with obstetric wards with only one or two deliveries per day. From the economic point of view, such a structure appears to be cost-ineffective and limits the personnel's exposure to patients with severe complications like to deal with pregnancy and labour complications, e.g. preeclampsia or perinatal haemorrhage. In bigger wards and departments, the necessity of employing anaesthetists dedicated only to obstetric wards is easier to justify. Such strategy seems essential considering plans for widespread use of labour epidural analgesia and an increasingly high number of Caesarean sections (currently approx. 30% of the total number of labours in Western Europe) [3]. Meanwhile, 24% of our hospitals employ not more than 5 anaesthetists which, with the increasing number of Caesarean sections, impedes proper functioning of an obstetric ward and does not guarantee a twenty-four hour availability of labour analgesia.

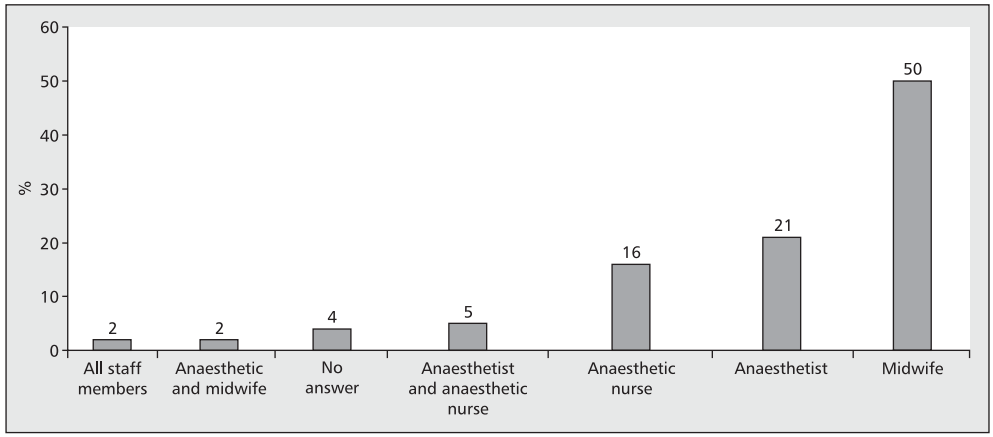

Figure 2. Medical personnel supervising a parturient scheduled for epidural analgesia

Labour epidural analgesia (despite medical indications) is rarely administered in Poland. The most frequently used alternative methods of labour pain relief are pethidine and other opioids in intramuscular injections, and Entonox (although very rarely). The most commonly used method of labour regional analgesia is epidural analgesia, followed by spinal and combined spinal-epidural analgesia. The last one is especially useful when quick onset of anaesthesia is needed. Moreover, it increases the efficacy of epidural analgesia since it additionally confirms the correct location of the epidural needle (backflow of the cerebrospinal fluid from the spinal needle introduced through the Touhy needle) [4].

A variety of agents were used for regional analgesia. There are still hospitals in which doctors administer bupivacaine in doses causing motor block and use many different additives.

According to recent studies, the most effective method of drug administration in labour epidural analgesia is by single injections, repeated periodically by the personnel or by patients using special pumps [5]. Single injections involving the medical staff were also found the most popular strategy in the surveyed hospitals. The less commonly used methods were infusions and patient-controlled epidural analgesia, most likely due to hospital budget limitations on purchasing suitable devices although the methods in question allow lesser involvement on the part of the anaesthetists. British guidelines suggest that administration of a single dose smaller than 10 mL of ≤ 0.125% bupivacaine solution does not require increased supervision over the parturient [6]. Polish guidelines are more restrictive since they recommend the 30-minute observation and monitoring of the patient's vital signs every 5 minutes with continuous presence of an anaesthetists [2]. Both British and American recommendations order measurements of vital signs every 5 minutes, however they can be carried out by a midwife; an anaesthetists should be available only in case of complications.

Our study revealed large latitude in choosing the methods to monitor and care over parturients (resulting from the lack of guidelines and proper staff training). Insufficient monitoring have created the risk of development of unnoticed, potentially serious complications such as hypotension, respiratory depression or too high level of blockade. This problem has already been addressed to in the national guidelines for labour epidural analgesia [2]; unfortunately, they lack indications for obligatory monitoring of sensory block. The monitoring methods should enable the parturients to move freely hence continuous ECG with simultaneous pulse recordings appears unnecessary in most cases.

Polish guidelines of 2009, as compared to the foreign ones, are also more restrictive in other respects, i.e. they arbitrarily define the starting point for labour analgesia (at least 4 cm dilation), whereas American and British recommendations allow the onset of analgesia at a mother's request regardless of the dilation because it does not delay the labour [6–8]. Moreover, British and American guidelines recommend the intravenous line insertion and initiation of fluid transfusions [7] but do not specify the volume of fluids before the onset of analgesia; otherwise, Polish guidelines order transfusion of 5–7 mL kg^{-1} of colloids or 10–15 mL kg^{-1} of crystalloids, which may hinder the initiation and management of labour analgesia in hospitals where anaesthetists are overloaded with work. Furthermore, according to Polish guidelines, each workstation in which labour epidural analgesia is performed should be equipped with an anaesthetic machine.

CONCLUSIONS

1. In 2009, labour epidural analgesia was rarely used in Poland. There were great freedom as to the choice of agents and monitoring of vital signs in anesthetized patients.
2. In half of the hospitals, midwives took care of parturients scheduled for labour analgesia, despite the lack of legal

regulations and appropriate training. This could entail legal consequences when complications develop.

3. Polish guidelines concerning labour epidural analgesia should be revised to become consistent with those of the developed countries and to allow more efficient initiation and management of labour epidural analgesia.
4. From the economic and organisational points of view, the introduction of labour epidural analgesia into the wards with small numbers of labours and hospitals employing only a few anaesthetists is not justified.

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