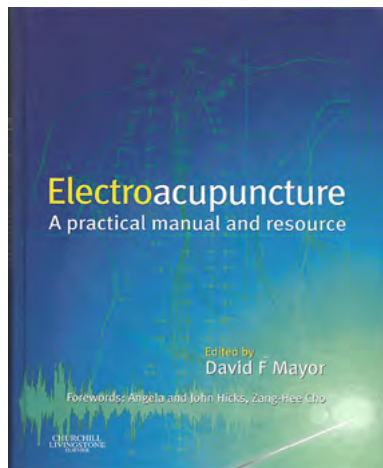




Mayor, D. Electroacupuncture



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Although caution suggests that LIJT should not be used during pregnancy, towards term LA at BL-67 has often been used as an alternative to traditional moxibustion. The two have even been combined. In one interesting study, HeNe LA at BL-60 (unilateral) was as effective as at BL-67 (bilateral). EA has also been used for version.

Comparisons In one study, EA was found to be marginally more effective than moxibustion (though not significantly so), whereas in another it was less helpful than moxibustion. LA, on the other hand, seems more consistently superior to moxibustion (with the combination of the two being more effective than either alone).

Points used BL-67 is the most commonly used point.

Parameters used There is little guidance on effective parameters to use with EA. One possibility might be to modulate EA intensity to mimic the effect of intermittent heating of the point, although some Chinese authors predictably recommend using the strongest tolerable current.

Caution

Given the effectiveness of traditional moxibustion, this should be attempted initially unless suitable LA equipment is available. EA should be attempted only if this fails. Given the possibility albeit unlikely, of disrupting the placental circulation when the baby turns, treatment should be carried out in consultation with the supervising midwife.



Labour

MISCARRIAGE AND PREMATURE LABOUR

Preterm labour may occur as a result of poor uterine or fetal circulation (placental insufficiency), or both. TENS (paravertebrally, for instance) has been found to improve circulation, increase activity and prolong gestation, with a positive impact on the health of the fetus. TCET with interferential currents has also been used to improve fetoplacental circulation, as well as levels of oxygen and other gases in the mother's blood. MA, EA, TENS, TCET and LA have been used to prevent miscarriage, and EAA during cerclage of the cervix.

Towards the end of pregnancy, when labour is imminent, both EA and TEAS have been considered helpful in preparing the mother for birth, reducing anxiety, normalising both CNS and autonomic activity, lessening early onset pains, and contributing to a better delivery.

Points used EA studies are too heterogeneous to draw any useful conclusions, although there are TCM arguments for using SP-4. Paraspinal TENS would appear to be justifiable for placental insufficiency. Starting at the 36th to 37th week of pregnancy, Nikolay Zharkin uses points that mildly

tonify the uterus and also calm the spirit, such as HE-2, HE-5, HE-7, HE-9, BL-13, BL-31-BL-34, P-6, P-7, LIV-2, LI-4, ST-25, SP-1, SP-6, Ren-6, Du-20 and yintang.

Parameters used Gentle LF EA would seem to be appropriate, rather than any form of strong stimulation. Thus Zharkin uses EA (at 3-6 Hz), but recommends the sessions should not last longer than 10 minutes. LF EAA (at just below discomfort level) of 'local' (tense) points was used in a study on cerclage, although in many EAA gynaecological studies these are given HF stimulation.

INDUCTION OF LABOUR

Induction of labour occurs frequently in the Western world. As an alternative to drugs, EA has been used in women who have had prior Caesarean section or ovarian surgery. Given during the final weeks of pregnancy, it may shorten the final stage of the ensuing labour.

It is sometimes hard to tell from induction studies what type of acupuncture (MA or EA) was used. However, there appears to be a preference for EA, which is considered to be more effective by some authorities. In one induction protocol, for example, MA was used at LIV-3, LI-4, SP-6 and SP-8 until contractions began, at which point EA was used to maintain them until delivery. Reinhold Voll recommended LF probe TENS (pTENS) at EAV points BL-50, BL-50c and BL-50-2. In an American acupuncture sourcebook from the early 1970s, SP-6, SP-15, Ren-2, Ren-3 and Ren-6 (but not Ren-5) were suggested, with 12 V pTENS for 15 seconds every 3-4 minutes, or 100-300 Hz 9-12 V EAS. The recommendation was given that EA at points close to the uterus should not be combined with oxytocin, to avoid tetanic contractions, although oxytocin could be used if EA failed, or could be combined with pTENS. A similar caution has been voiced against combining electrostimulation of auricular Uterus and Bladder points with oxytocin.

TENS has been used to stimulate uterine contractions. Indeed, experimental electrical stimulation of the uterus was carried out as long ago as 1911.

Case study 9.5.1 details the use of electroacupuncture in obstetric care.

UTERINE INERTIA

Fatigue during childbirth can prolong labour, and is the cause of many Caesarian sections. Electrostimulation in 'tedious labour' and haemorrhage (for instance, in cases of placenta praevia) has been known since the nineteenth century. There are several studies of EA for 'labour fatigue' (uterine inertia) from Eastern European countries. TENS, TCET and LA have also been used.

Points used LI-4 and SP-6 are by far the most commonly used acupoints for induction, whether with MA or EA, although in a number of studies Ren-2, Ren-3 and/or Ren-6 were added, and occasionally local (BL-32) or distal (BL-67, BL-67) Bladder meridian points, and other points according to TCM differentiation.

CASE Study 9.5.1

Electroacupuncture in obstetric care Sarah Budd

Acupuncture has been practised by the midwives in the maternity unit in Plymouth since 1988. Initially, the service was set up to cater for women wishing to reduce the amount of drugs they used for pain relief in labour, or to find a treatment that would be an alternative to, or complement, conventional induction of labour. This then evolved into a busy outpatient service for pregnancy-related conditions.

Electrostimulation was found to be preferable to manual stimulation of the needles for induction of labour and pain relief in labour. Not only does it enhance the effect of the needles more comfortably over what could be a long period of time, but it also allows the woman to have some control over the amount of stimulation she is receiving through the needles (Fig. 9.5.1), something that is very useful during painful contractions.

Electroacupuncture to induce labour

The most common indication for induction of labour is when pregnancy has gone beyond 40 weeks' gestation.

Management by obstetricians varies, with some intervening at 41 weeks and others waiting until 42 weeks. The usual method is to use hormonal pessaries, which many women prefer to avoid where possible. Acupuncture is a very useful alternative.

The main points used to initiate contractions are *Hegu* (LI-4) and *sanyinjiao* (SP-6) with electrostimulation for 20 to 30 minutes, followed by turning the patient on to her left side, and using BL-31 and BL-32, again with electrostimulation for 20 minutes. Other points for imbalances indicated by a TCM diagnosis may also be added when appropriate.

As a caution, it is important to note that pregnant women can have a tendency to faint if lying flat on their backs, because of pressure from the baby on the inferior vena cava causing postural hypotension. It is therefore advisable to sit them up as much as is comfortable for the first points, and stay with them where possible.

Electroacupuncture for pain relief in labour

In the Chinese texts the points SP-6 and LI-4 are recommended. When women are in active labour, however, they usually like to move around and adopt several positions, which makes these points difficult, so at the maternity unit in Plymouth it was decided to use the ear points Uterus, Shenmen and Endocrine, as they are less restrictive (see Fig. 9.5.1).



Figure 9.5.1 Electroacupuncture in childbirth Sarah Budd giving instruction in the use of the WQ10C2 device for auricular stimulation. (Courtesy of Sarah Budd. Photograph by Helen Blake)

CASE Study 9.5.1 Continued

One side is used first, whichever the birthing mother prefers, rather than both. It is then possible to use the other side if the labour is long and the ear becomes sore, particularly if needles fall out and have to be replaced.

The points are needled with 12.5 mm (0.5 inch) needles, which are taped down. They should be inserted about 2–4 mm, depending on angle of insertion (a 'flatter' angle is better when securing with tape). One electrode is attached to either of the top points, Uterus or *shumen*, and the other to Endocrine at the bottom. It may be a good idea to place a cotton wool ball between the two electrodes so that they cannot touch and 'short out,' which is not only very uncomfortable but also quite likely if the woman is moving around a lot.

It does not take very long for the acupuncture to take effect, usually within 10 to 20 minutes, and when all is going well, it is a wonderful sight as the women are so much more relaxed. Sometimes, the midwives have almost been caught out, when they have not expected a woman who is so calm to suddenly start pushing!

If the contractions become less frequent in labour, it is a good idea to try to enhance them with some of the points above used for induction of labour, adding others as appropriate, such as ST-36 for tiredness or LIV-3 if the cervix does not dilate.

As with TENS, the signal from the EA stimulator can interfere with the fetal monitor (CTG, or cardiotocograph). Keeping the two as far apart as possible usually resolves this problem.

Case 1. Diana – induction of labour

This was a second baby; the mother presented at term plus 10 days requesting acupuncture for induction of labour, as she was booked in for medical induction in 5 days' time. A full case history was taken. TCM diagnosis was of slight Stomach and Spleen qi xu.

Treatment:

LI-4 R (+) and ST-36 R (-)
LI-4 L (+) and SP-6 L (-) Medium frequency 30 Hz
SP-6 R (+) and LIV-3 R (-) Intensity 1 to 4.5
LIV-3 L (-) and ST-44 L (-)

Then:

GB-21 R (+) and BL-21 R (-)
GB-21 L (+) and BL-20 L (-) Medium frequency 30 Hz
BL-32 and BL-31 Intensity 1 to 4.5
(both bilateral stimulation)

Went home with seeds on left ear points: Uterus, Endocrine, Stomach, Subcortex and Kidney.
Diana cancelled her next appointment and went into spontaneous labour on the day she was due to go into

hospital for medical induction of labour. She had a normal delivery of a baby girl with a birth weight of 4160 g.

Case 2. Sally – induction of labour following spontaneous rupture of membranes

This was a first baby; the mother presented at term having had ruptured membranes for 48 hours. This means there is some risk of infection as the membranes normally protect against infection up to a point, so she had been started on antibiotics orally. There were only occasional period-type pains.

Treatment:

LI-4 and ST-36 Medium frequency 30 Hz
(both bilateral stimulation) Intensity 3 to 4
Sp-6 and LIV-3
(both bilateral stimulation)

Then:

GB-21 and BL-32
(both bilateral stimulation)
BL-31 R (+) and BL-60 R (-) Medium frequency 30 Hz
BL-31 L (+) and BL-67 L (-) Intensity 3 to 6

Went home with seeds on right ear points: *shumen*, Uterus, Endocrine and Stomach.

Sally went into spontaneous labour at 6 a.m. the next day and at 9.15 a.m. the cervix was 4–5 cm dilated. She delivered a baby girl at 1.30 p.m., with a birth weight of 3840 g. There was no maternal pyrexia following delivery.

Case 3. Fran – analgesia in labour

This was a first baby; the mother was admitted to the delivery suite of the maternity unit at 5 p.m. with a history of spontaneous rupture of membranes since midnight, and contractions since 7 a.m. Examined at 6 p.m., when the cervix was 3 cm dilated. Acupuncture commenced for pain relief at 7.18 p.m. The point Du-20 used to relax mind and body, and manually stimulated. Bilateral LI-4 and LIV-3 were added, and all points manually stimulated at 5-minute intervals.

Treatment:

7.45 p.m.: Needles inserted to right ear points:
shumen and Endocrine Medium frequency 30 Hz
Intensity 3.5

Uterus point added, Manual stimulation

All body needles were removed.

8.06–9.25 p.m.: Intensity gradually increased from 3.5 to 5.5, with cervix dilating to 6 cm at 9.05. Coping well.

10.10 p.m.: Strong urge to push. O/E: cervix fully dilated. Started pushing.

10.32 p.m.: Normal delivery of baby girl, birth weight 3105 g.

(Continued)

CASE Study 9.5.1 Continued

Case 4. Gill – analgesia in labour

This was a first baby; the mother was admitted to the maternity unit delivery suite at 7.20 a.m., membranes having ruptured at 2.45 a.m. On examination at 7.45 a.m., the cervix was 2–3 cm dilated. Gill had a hot bath and some tea and toast. At 8.45 a.m., point Du-20 used for relaxation (manually stimulated), and ear points for pain relief:

Treatment:

8.55 a.m.: Needles inserted to right ear points:	
shimen and Endocrine	Medium frequency 30 Hz
	Intensity 3.5
Uterus point	Manual stimulation

9.15 a.m.: Intensity increased to 4. Fetal heart fine and contractions good.

9.30 a.m.: Needle to point Du-20 removed. Gill was comfortable, relaxed between contractions.

9.45–11 a.m.: Intensity increased gradually in stages to 4.75. Gill in 'all fours' position, then gets up to go to toilet, and eventually gets into water-birth pool (all acupuncture needles removed).

11.30 a.m.: Normal delivery in water of baby girl, birth weight 3550 g.

Parameters used Although many of the EA studies use relatively low-frequency stimulation (LF, around 2–8 Hz), some use much higher frequencies (120–500 Hz), and at least one DD (dense-disperse). The emphasis in general seems to be on strong (but non-painful) stimulation. As for TENS, there are too few studies to draw any conclusions. However, it is intriguing that in one Russian report on combined EA and TENS, LF (3–7 Hz) EA with high-frequency, low-intensity TENS (conventional TENS, CTENS) was considered more helpful in slowing down the process of early labour, whereas higher-frequency (3–30 Hz) EA led to induction. Another report from the same Moscow group found that 100–120 Hz TENS could be used to stimulate the uterus, and 30 Hz TENS for relaxation.

Recommendation

For induction, use LI-4 and SP-6, with strong but not painful EA (20 Hz has been suggested). Auricular points such as Endocrine, Uterus and shimen may be used too. BL-67 and auricular Badder point may be added to enhance stimulation (10 Hz surface stimulation of BL-67 alone has been used quite successfully for induction). Daily treatment is essential, and may even be repeated several times each day if necessary.



PAIN RELIEF DURING LABOUR

Most women in the West request some form of analgesia during childbirth, with the vast majority wishing to remain fully alert and to play an active role as well. Simple, non-sedating low-risk analgesic methods such as TENS, TCET and (perhaps to a lesser extent) EA clearly have a role to play if they can be shown to be effective. Even if EAA and related methods only reduce the need for medication without

major impact on experienced pain, this could nevertheless contribute significantly to a more positive outcome for both mother and child.

EA has frequently been used during labour, although MA prior to labour appears to be of little benefit for the pain of labour. Like acupuncture and MA, it can have a calming as well as a pain-relieving effect.

Unfortunately, analgesia with EA is rarely complete and not always predictable, and this, together with possible interference with fetal monitoring and the presence of wires that can become an encumbrance, may make EA less convenient than TENS. However, even with these shortcomings EAA has a role to play in labour if used appropriately. Observational studies have found that EA may shorten labour (particularly the first stage), reduce the duration of pain during each contraction, and contribute to the mother's sense of well-being and being in control of the situation.

TENS has frequently been used for pain relief during labour, with few apparent adverse effects on the neonate. Despite some shortcomings, it may be simpler both to set up and operate than EA. Furthermore, many obstetric TENS devices are supplied with a handheld switch for the birthing mother to hold, which can make the procedure feel more controllable. TENS may also encourage the mother to stay mobile longer, and it is telling that in many studies women expressed considerable satisfaction with TENS, even if 'objectively' it gave incomplete pain relief.

TCET has also been used during labour, with minimal adverse effects on the fetus. Whichever method is used, it is important to start treatment for pain relief as soon as possible once contractions have begun.

Points used There are many protocols for EA in childbirth. Nguyen Van Nghi and colleagues suggested GB-26, LI-4 and ST-36, but also mentioned other combinations, such as BL-57, GB-28, LIV-2, LI-4 and SP-9, or GB-26, LI-4 and

Electroacupuncture

A practical manual and resource

This book provides a clear and accessible overview of the theoretical foundations of electroacupuncture (EA), together with experimental and clinical evidence for the usefulness of electroacupuncture in its various forms. It also serves as a manual for the effective clinical practice of electroacupuncture, with a number of illustrative case histories. It serves as an excellent background to the subject, covering all the key information a beginner practitioner would need to know, as well as exploring avenues for advanced practice.

The publication is divided into two parts, the book itself and the accompanying CD-Rom. In addition, the extensive database of more than 8,000 clinical studies on the CD-Rom is accessible via the Internet, at www.electroacupunctureknowledge.com.

While the book itself can be read cover to cover, or as a reference work, and provides quite enough information to permit safe and effective treatment of many conditions, it can also be used as a portal to the CD-Rom, which is designed more as a research resource, with considerably more information on most topics. Much fuller versions of the chapters in the book are browsable on the CD-Rom, in addition to the database and other material.

The book is divided into the following three parts:

Part I of the book includes an introduction to the historical background of EA.

Part II, Scientific and Clinical Foundations, is about electroacupuncture research and its clinical application. Its main aim is to present the evidence for how and whether electroacupuncture works, so that readers can then make more informed decisions in clinical practice. It starts with detailed discussions of the relevant EA research issues, electrotherapy and neuroscience, followed by in-depth description of the experimental and clinical literature.

Part III focuses on the technology involved and its application in clinical practice.

Appendices on useful resources and legislation are included in the book. Further appendices, on drug interactions with EA, acupoint innervation and terminology, and the teaching of electroacupuncture in North America, can be found on the CD-Rom.

Key features:

- Designed for both technically and non-technically minded readers
- The only book on the subject to offer both practical suggestions and thorough exploration of the research behind the practice
- Provides a basis for immediate practical application in a variety of clinical situations
- Synthesises highly technical and sometimes confusing information in a manageable and practical format
- Written by an acupuncturist with over 20 years experience in the field
- Fully searchable database of more than 8,000 clinical studies is accessible via the accompanying CD-ROM and website
- Includes material from thousands of studies never before available in English – translated from Chinese, Russian, Ukrainian and other European languages
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- Chapters and case studies from 23 different practitioners, many of them acknowledged leaders in their field, illustrate the variety of possible approaches
- Comprehensive glossary defines and explains important concepts
- The first thorough overview of modern acupuncture methods for 20 years

About the editor:

David F Mayer is a widely experienced nonmedical acupuncturist in private practice in Hertfordshire, England, integrating different strands of traditional and modern acupuncture with other skills learned over the years. He lectures on electroacupuncture at a number of acupuncture colleges in the UK.



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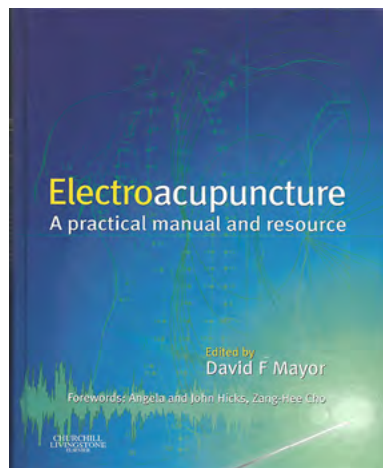
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