

Article

Caracterização de Contrações Uterinas (birth contractions) usando técnicas fuzzy

Bruno Tondin ^{1,‡}, Raissan Chedid ^{1,‡} and Alexandre Balbinot ^{1,‡}

¹ IEE-DELET; e-mail@e-mail.com

[‡] These authors contributed equally to this work.

Version May 21, 2017 submitted to Bioengineering

Abstract: A single paragraph of about 200 words maximum. For research articles, abstracts should give a pertinent overview of the work. We strongly encourage authors to use the following style of structured abstracts, but without headings: 1) Background: Place the question addressed in a broad context and highlight the purpose of the study; 2) Methods: Describe briefly the main methods or treatments applied; 3) Results: Summarize the article's main findings; and 4) Conclusion: Indicate the main conclusions or interpretations. The abstract should be an objective representation of the article, it must not contain results which are not presented and substantiated in the main text and should not exaggerate the main conclusions.

Keywords: keyword 1; keyword 2; keyword 3 (list three to ten pertinent keywords specific to the article, yet reasonably common within the subject discipline.)

1. Introduction

The introduction should briefly place the study in a broad context and highlight why it is important. It should define the purpose of the work and its significance. The current state of the research field should be reviewed carefully and key publications cited. Please highlight controversial and diverging hypotheses when necessary. Finally, briefly mention the main aim of the work and highlight the principal conclusions. As far as possible, please keep the introduction comprehensible to scientists outside your particular field of research. Citing a journal paper [2].

2. Materials

2.1. The Icelandic 16-electrode Electrohysterogram Database

A base de dados utilizada neste trabalho foi obtida entre 2008 e 2010 nos hospitais Landspítali University Hospital, Akureyri Hospital e Akureyri Primary Health Care Centre na Islândia. Foram feitas 122 medidas (recordings) em 45 mulheres grávidas, onde 32 foram analisadas repetidamente durante o período de gravidez, participando de duas a sete vezes. As sessões ocorreram no terceiro trimestre da gestação (112 gravações) e durante o trabalho de parto (labor) (10 gravações). Esta base inclui dados de tocodinamometria, anotações de eventos e informações obstétricas das participantes. Todos os dados foram obtidos com o consentimento dos participantes e os protocolos foram aprovados pelo Comitê Nacional de Bioética da Islândia (VSN 02-006-V4) [1].

Um *grid* de 4x4 eletrodos monopolares reutilizáveis de Ag/AgCl foi disposto no abdômen das pacientes conforme pode ser visto na Figura 1

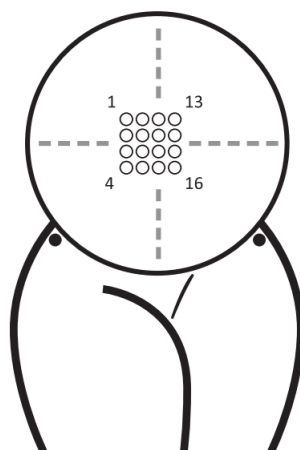


Figure 1. Posição ideal do *grid* de 16 eletrodos. Os eletrodos pretos representam o *ground* do paciente.

As medidas foram realizadas utilizando um equipamento de aquisição de dados fisiológicos de 16 canais (Embla A10). Um filtro *anti-aliasing* com corte em 100Hz foi usado, porém nenhum filtro passa-alta foi implementado. A taxa de amostragem do sinal foi de 200Hz, com uma resolução de 16 bits. [1].

3. Materials and Methods

Materials and Methods should be described with sufficient details to allow others to replicate and build on published results. Please note that publication of your manuscript implicates that you must make all materials, data, computer code, and protocols associated with the publication available to readers. Please disclose at the submission stage any restrictions on the availability of materials or information. New methods and protocols should be described in detail while well-established methods can be briefly described and appropriately cited.

Research manuscripts reporting large datasets that are deposited in a publicly available database should specify where the data have been deposited and provide the relevant accession numbers. If the accession numbers have not yet been obtained at the time of submission, please state that they will be provided during review. They must be provided prior to publication.

Interventionary studies involving animals or humans, and other studies require ethical approval must list the authority that provided approval and the corresponding ethical approval code.

4. Results

This section may be divided by subheadings. It should provide a concise and precise description of the experimental results, their interpretation as well as the experimental conclusions that can be drawn.

4.1. Subsection

4.1.1. Subsubsection

Bulleted lists look like this:

- First bullet
- Second bullet
- Third bullet

Numbered lists can be added as follows:

- 58 1. First item
 59 2. Second item
 60 3. Third item

61 The text continues here.

62 4.2. *Figures, Tables and Schemes*

63 All figures and tables should be cited in the main text as Figure 1, Table 1, etc.



Figure 2. This is a figure, Schemes follow the same formatting. If there are multiple panels, they should be listed as: (a) Description of what is contained in the first panel. (b) Description of what is contained in the second panel. Figures should be placed in the main text near to the first time they are cited. A caption on a single line should be centered.

Table 1. This is a table caption. Tables should be placed in the main text near to the first time they are cited.

Title 1	Title 2	Title 3
entry 1	data	data
entry 2	data	data

64 4.3. *Formatting of Mathematical Components*

65 This is an example of an equation:

$$\S \quad (1)$$

66 Please punctuate equations as regular text. Theorem-type environments (including propositions,
 67 lemmas, corollaries etc.) can be formatted as follows:

68 **Theorem 1.** *Example text of a theorem.*

69 The text continues here. Proofs must be formatted as follows:

70 **Proof of Theorem 1.** Text of the proof. Note that the phrase ‘of Theorem 1’ is optional if it is clear
 71 which theorem is being referred to. □

72 The text continues here.

73 5. Discussion

74 Authors should discuss the results and how they can be interpreted in perspective of previous
 75 studies and of the working hypotheses. The findings and their implications should be discussed in the
 76 broadest context possible. Future research directions may also be highlighted.

6. Conclusions

This section is not mandatory, but can be added to the manuscript if the discussion is unusually long or complex.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. Alexandersson, A. *et al.* The Icelandic 16-electrode electrohysterogram database. *Sci. Data* **2**:150017 **2015**, doi: 10.1038/sdata.2015.17.
2. Lastname, F; Author, T. The title of the cited article. *Journal Abbreviation* **2008**, *10*, 142-149.

© 2017 by the authors. Submitted to *Bioengineering* for possible open access publication under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).