Cardiotocogram automated analysis in twins' pregnancy: development and evaluation
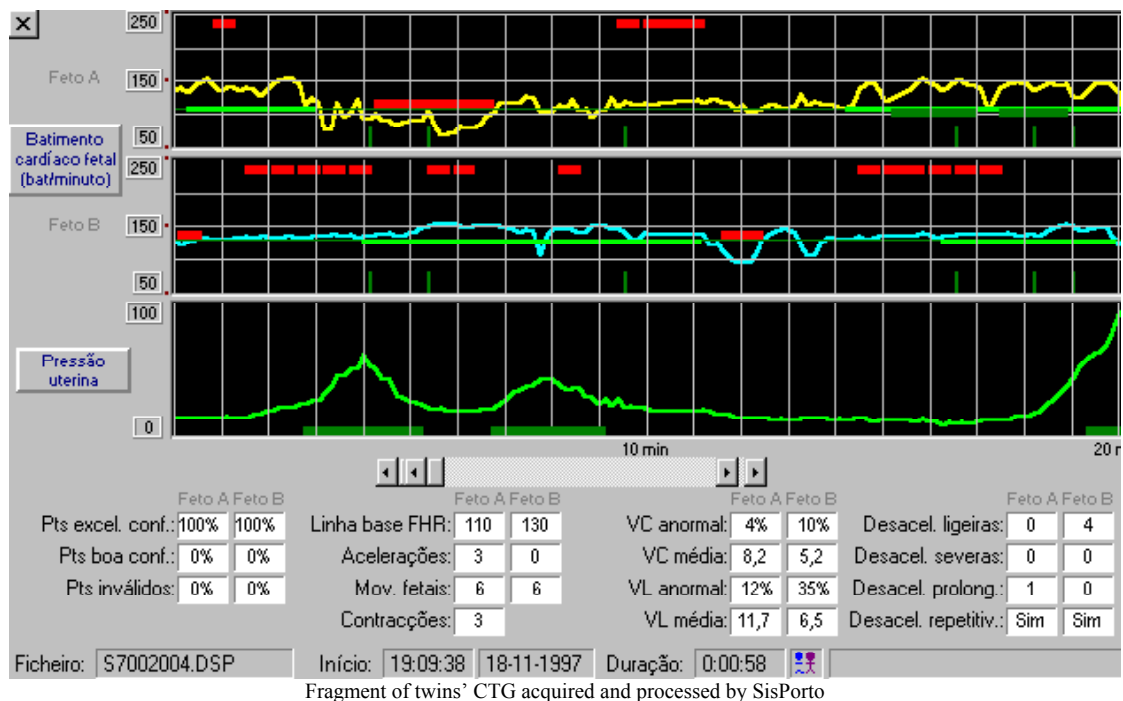
Objective:

Development and clinical evaluation of a cardiotocogram automated analysis system for diagnosis and foetal monitoring in twins' pregnancy.

Introduction:

The number of twins' pregnancies has been increasing, namely as a result of medically assisted reproduction techniques. Twins' pregnancy means a significant increase of perinatal morbidity and mortality rates. In this context cardiotocography is considered a highly interesting means of foetal monitoring and diagnostic. It has been noticed, however, that cardiotocography may lead to inappropriate obstetric interventions mostly due to the poor reproducibility of the cardiotocogram (CTG) visual analysis. SisPorto 1.0 is a validated system of automated CTG analysis allowing the reproducible and quantitative analysis in monofoetal pregnancies. A great expectation is therefore set in the adaptation of SisPorto to handle twins' pregnancies.

Methods and Results:

The SisPorto 2.0 prototype handling twins' pregnancies has been concluded using appropriate equipment and software development. Preliminary evaluation has also been performed.

Fragment of twins' CTG acquired and processed by SisPorto

Thorough clinical evaluation of SisPorto 2.0 is in current progress. SisPorto was awarded the 1st Prize of the Microsoft National Contest in the science area.

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