Ketamine for labour analgesia – case report

Joana Barros-Silva^a, **Nuno Lareiro^a**, Luísa Saraiva^a, José Nuno Figueiredo^a

a) Anaesthesiology Department, Centro Hospitalar do Baixo Vouga, Aveiro, Portugal

Introduction

Ketamine is a powerful general anaesthetic with dissociate effect. Its analgesic properties are well acknowledged.

Recent studies demonstrated the increasing interest in ketamine for labour analgesia, particularly in developing countries.^{1,2} Some authors concluded that, when used in subanaesthetic doses, ketamine produces effective analgesia, with a rapid onset and short half-life. It seems to be effective in reducing pain and discomfort during labour, with a low incidence of side effects, keeping the parturient cooperative.^{2,3}

In developed countries, for situations when epidural analgesia is contraindicated, ketamine can be beneficial comparing to opioids, since it is not a respiratory depressant.

The following case report describes the use of ketamine perfusion for labour analgesia in a parturient with thrombocytopenia.

Case Report

- 29 y.o. parturient, ASA II, G1P0 (36w+4d).
- Admitted in the Obstetric Emergency Department (OED) in labour due to premature rupture of membranes.
- Medical records showed a low platelet count since childhood.
- 3rd trimester blood work: platelet count of $96 \times 10^9/L$ with a blood smear showing giant platelets.
- Blood count performed at OED: platelet count of $84 \times 10^9/L$.
- With a decreasing pattern of platelet levels and no available information of her platelet function, it was decided not to perform an epidural.

Ketamine Protocol¹

Loading Dose	0,2 mg/kg + 100ml saline.
	Infusion Rate: 200ml/h
Perfusion	Infusion Rate: 0,2 mg/kg/h

- Monitorization (10/10 min): maternal heart rate, blood pressure, S_pO_2 , pain and sedation scores, fetal heart rate and side effects related to ketamine, such as: sedation, hallucinations and nistagmus during labour; sleep disturbance or vivid dreams postpartum.

Initiation of protocol

- 1^o stage of labour (5cm dilation and contractions every 10 min)
- Pain 8 (NRS)
- Parturient and fetus haemodynamically stable

Active labour

- 40min after loading dose
- Pain 1 (NRS)
- Parturient cooperative in labour
- Eutocic delivery. Apgar Score 9/10

3rd stage of labour

- Pain 1-2 (NRS)
- Perineal infiltration for episiorrhaphy
- Haemodynamic stability
- No side effects reported

24h postpartum

- No pain and no side effects reported
- Intact memory of the whole process of labour
- Satisfactory experience

Discussion

A low dose of ketamine allows satisfactory relief of labour pain without interfering with its progression or the newborn's wellbeing.¹

A loading dose is helpful to accelerate analgesia but it should be administered at a slow rate, in order to minimize the incidence of side effects, particularly psicomimetic ones.¹

This can be considered a safe technique, requiring only standard monitoring already in use at the OED. Contrary to remifentanyl, ketamine infusion does not seem to depend upon a parturient/nurse ratio of 1:1, since it is not associated with excessive sedation or respiratory depression.

Learning Points / Take Home Messages

Ketamine in analgesic doses has demonstrated efficiency in labour analgesia, without maternal or fetal side effects.

In situations in which epidural analgesia is contraindicated, ketamine might present as an alternative to opioids.

However, more studies are necessary to validate the technique.