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GIVE UP ON REMIFENTANIL LABOR ANALGESIA: India-Based Anesthesiologist and America-Based Anesthesiologist Siblings' Dialogue Series

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Abstract

Question: Should We Give Up On Remifentanil Labor Analgesia As A Potential Alternative To Labor Epidural Analgesia? Answer: It Depends.

Dialogue

DiG: Hey Bro.

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DeG: Hi Sis.

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DiG: What is the status of labor analgesia up there?

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DeG: Almost exclusive labor epidural analgesia for everyone who requests it. How about over there?

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DiG: Not too pushy about it over here.

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DeG: Why so? Is it that anesthesiologists do not offer? Or is it that patients do not ask?

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DiG: May be both.

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DeG: What are the limitations? Why anesthesiologists not offering? Why patients not asking?

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DiG: Anesthesiologists may be because of absence of universal continuous intrapartum materno-fetal monitoring. Patients may be because of absence of universal awareness about labor analgesia including epidurals.

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DeG: As a patient over there, it must be bad going through labor pains knowing that it would not have been the case if you were up here.

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DiG: Do you mean to say that none up there suffers from lack of labor analgesia?

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DeG: At least not by absence of available choices.

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DiG: Do you mean to say that whenever any patient chooses to have labor epidural, she will definitely receive it?

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DeG: No, No Sis. Letâ€™s not go overboard. As long as there are no absolute contraindications, any laboring patient requesting for labor epidural analgesia will definitely receive labor epidural.

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DiG: I know the absolute contraindications of epidurals. Assuming there is one in the laboring patient in question, what do you do? Forget about that, what do you do if epidural space is inaccessible despite multiple attempts? Or if epidural analgesia fails to control and patient asks for alternative options?

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DeG: You got me, Sis. I know you are talking about alternatives to labor epidurals for intrapartum analgesia. But there are none as good as labor epidurals.

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DiG: Why so?

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DeG: The most important one is that except for epidural-in-situ, no other alternative option can be converted from labor analgesia mode to surgical anesthesia mode when laboring patientsâ€™ and/or their fetusesâ€™ clinical conditions change, warranting cesarean section delivery of fetus.

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DiG: Is that the only reason why no other alternative option is sought or explored?

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DeG: Fetal exposure to maternally administered medications is much less when medications like local

anesthetics and opioids like fentanyl are being administered epidurally in low doses.

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DiG: But, Bro, these medications do cross the placenta [1-3].

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DeG: Yes, Sis. But these medications have NOT been absolutely contraindicated in laboring patients when used with caution.

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DiG: Do you mean to say that analgesics like intravenous opioids can also be used as long as caution is practiced during use?

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DeG: Itâ€™s true. Which intravenous medications are you talking about?

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DiG: I am talking about old-school pethidine-promethazine in India (also called meperidine sold with brand name Demerol in the United States) or new-school remifentanil in United Kingdom (UK) [4-6].Â Â Â Â

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DeG: Do you know what restricts remifentanil use in labor analgesia?

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DiG: I think it must be the cost of acquiring remifentanil. This may be despite labor epidurals been shown to be non-significantly costlier than remifentanil labor analgesia in a recently published study [7].Â Â

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DeG: Donâ€™t forget that patient satisfaction scores are always shown to be better with labor epidurals [8-9].

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DiG: But do you think that it is a good alternative to labor epidural analgesia? And is it feasible over here?

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DeG: I think it is a good alternative when labor epidural is not feasible [10]. But there are some cautions warranted considering that absence of universal continuous intrapartum materno-fetal monitoring may have prevented popularity of labor epidurals among obstetricians and anesthesiologists over there.

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DiG: What do you mean, Bro?

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DeG: I think continuous materno-fetal monitoring is a must when using remifentanil labor analgesia, more importantly maternal monitoring (continuous respiratory rate monitoring or at least continuous pulse oximetry) considering the respiratory depressant effects of remifentanil like any other opioid [11-13].

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DiG: But Bro, doesnâ€™t non-specific tissue and plasma esterases ensure that remifentanil remains ultra-short acting?

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DeG: Itâ€™s true, Sis, that remifentanil is ultra-short acting but its effects on respiratory depression may not be ultra-short acting because the safety window for presence and absence of pain may be very wide but the safety window for presence and absence of respiration is very narrow. Donâ€™t forget that though remifentanil is ultra-short acting, it is the one of the most potent opioids. But the good thing is that as compared to continuous infusion used during surgical anesthesia-analgesia, it is only used as patient controlled analgesia (PCA) with no background infusion and thus utilizing its rapid elimination property as a safeguard during its use for labor analgesia.

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DiG: Do you have any protocol for remifentanil labor analgesia?

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DeG: Yes Sis. Under the inspirational guidance of my mentor, Dr Vitaly Soskin, MD, PhD, I had led our team to consider developing and thereafter using remifentanil PCA for labor analgesia as follows:

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- 20mcg patient self-administered boluses that can be increased to 30mcg boluses and max 40mcg boluses: Essentially ONLY patient self-administering their boluses in response toÂ almost allÂ uterine contractions whereinÂ the bolusesâ€™ effects' duration may presumably last just long enough to blockÂ the corresponding uterine contractions' pain, and thus, nurse/caregiver-administered boluses becoming prohibited
- Minimum 2min lockout interval (Alaris PCA System can go that low [14]) with possibility to start higher lockout interval corresponding to the frequency of the uterine contractions
- No background infusion
- No meperidine or morphine or any opioidsÂ (by any routes) when planned for this PCA
- Only indication for this PCA being contraindications of epiduralsÂ and/or patient refusal to epidurals
- Ensuring transfer to the unit where continuous pulse

oximetry for the laboring patients feasible
- Nasal oxygen supplementation at 3-4liters
- Fetal monitoring always and thus may not consider for laboring patients with intrauterine fetal death because there will be no fetal monitoring which itself has much more sensitivity and hence a lead timeÂ to detect early the changes in maternal vital parameters
- 1:1 obstetric nursing staff and laboring patient ratio
- Direct supervision and management of PCA by anesthesia provider

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Essentially, emergent use of remifentanil labor analgesia remifentanil PCA can be considered as rescue labor analgesia where labor epidural analgesia is contraindicated OR as preferred labor analgesia where labor epidural analgesia is comparativelyÂ costly (an issueÂ sometimesÂ raised by the lawmakers) [15-16] considering that per UK study [6, 17], remifentanil labor analgesia can avoid conversion to labor epidural analgesia in >80% remifentanil PCA patients in case patients are requesting to avoid "needle-in-the-back" and thus refusing labor epidural analgesia.

DiG: Looks like a good plan. Are you using it? Are you planning to use it? Can we consider using it?

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DeG: Because of logistics, we are NOT using it yet. But I think I am NOT giving up on remifentanil labor analgesia yet. Regarding your team utilizing it after remifentanil has become readily available in India in future, your team can discuss and consider it but it will be uphill task considering that continuous materno-fetal monitoring may NOT be universally available over there and costs of remifentanil as well as worries about using opioids in laboring patients may turn out to be self-defeating cause over there.

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DiG: But, Bro, isnâ€™t fighting the opioid epidemic a very big news up there [18]? Arenâ€™t the concerns about potent opioid use during labor no longer limited to over here but also up there and everywhere?

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DeG: I totally agree, Sis. But the curses of pain management should NOT prevent us to ignore the miracles of pain management [19]. Itâ€™s just that we have to be cautious, conscious and conscientious whenever managing our pain (or laboring) patients with highly potent medications as long as they have NOT been contraindicated to be used. And remifentanil labor analgesia is NOT a contraindicated avenue to explore in laboring patients [20].

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DiG: Nice talking to you, Bro.

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DeG: Same here, Sis. Hoping remifentanil labor analgesia receives its due whether it is for laboring patients up here or over there.

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DiG: Amen to that.

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