Transdermal fentanyl patch in post-operative patients: Is it justified?

Sir,

Fentanyl patches are approved by the United States-Food and Drug Administration (US-FDA) for patients who are opioid resistant. Patients who are suffering from moderate to severe pain even when they are using continuous, round-the-clock opioid medications for more than a week are called opioid resistant. Fentanyl is a Schedule II opioid agonist, i.e., it has a potential for abuse and could lead to serious respiratory depression.\[^{[1]}\] Fentanyl transdermal patches are not indicated in acute post-operative pain due to the risk of serious, life-threatening respiratory depression and at times death, which is clearly mentioned as an important warning by the drug manufacturers themselves.

Grissinger described two cases who were discharged home with fentanyl patch prescription. The first was a post-operative patient who died due to overdose. The second patient was brought to emergency room but did not have any adverse consequences.\[^{[2]}\] In spite of this, a lot of research articles are getting published in peer-reviewed journals describing the use of fentanyl patches for post-operative analgesia after getting approval from the Local Ethics Committee or Institutional Review Board.

The kinetics of absorption of an opioid patch is not predictable. The onset of action can take several hours depending on the body temperature, previous dosing of opioid and factors such as site of application, haemodynamics and general condition of the patient (emaciation, hypovolaemia). Similarly, after the patch is removed, the absorption continues in an unpredictable manner for several hours.\[^{[3]}\] Due to slow onset of action, patients are asked to apply the patch on the day before surgery which is not justified. Cutaneous blood flow at the site of patch influences...
the rate of absorption of drug. Pyrexia, warming blanket, humidity or vasodilatation due to sepsis and regional anaesthesia lead to increased blood flow to the skin which hastens the rate of overall systemic drug absorption. Elevated levels of fentanyl could lead to respiratory depression even in patients with opioid tolerance. As fentanyl patches are indicated only for patients who are opioid tolerant, the high dose can be lethal to opioid-naïve patients. The patches are unsuitable for acute post-operative pain and day-care procedures where analgesia can be managed quite effectively using a multimodal approach.

Extended release-long acting (ER-LA) opioid analgesics are now under the risk evaluation and mitigation strategy (REMS) of US-FDA. The reason for implementing this strategy is to reduce the risk of abuse, misuse, addiction, overdose and deaths due to prescription opioid analgesics.[4] The patch should be prescribed to patients who are considered opioid tolerant by an anaesthesiologist, pain physician or a palliative care physician. An opioid tolerant patient should be highlighted in the pre-anaesthesia check-up because in these patients the post-operative analgesia has to be planned differently.

Stringent protocols should be implemented when such potent, transdermal drug delivery systems are prescribed to patients. Patients should be judiciously selected, prescribed and monitored to avoid litigations and medicolegal issues due to unwanted catastrophic events. Family members should be informed to report to emergency room if patients are discharged with a prescription involving an opioid patch. However, this practice is not desirable and can be disastrous. Off-label indications should be considered if the benefit outweighs the risk while prescribing potent opioids. Only authorised physicians should prescribe such drugs.

A fentanyl transdermal system IONSYS – a patient-controlled analgesia system that delivers fentanyl across the skin using iontophoresis – has been approved by US-FDA for the management of acute moderate-to-severe post-operative pain in adults not controlled by multimodal measures having efficacy equivalent to intravenous morphine.[5] REMS program approves the use of IONSYS in admitted, post-operative patients for up to 72 h.

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