diabetes mellitus. These data differ from our analysis of the large US National Inpatient Sample, in which 61% of women had no known preceding risk factors for MI. In addition, the rate of MI during pregnancy and the puerperium was much higher in this series than in our analysis, perhaps reflecting different risk factor profiles in the United States and this region of India. Coronary angiography performed in the 12 patients in their series revealed heterogeneous mechanisms of MI, including coronary spasm, coronary artery dissection, and thrombosis with near complete thrombosis. These and other data suggest that a substantial proportion of acute coronary syndromes in pregnancy may be attributed to MI with nonobstructive coronary arteries. This syndrome predominately affects women and is the subject of ongoing clinical investigation.2,3

Notably, 8 of the 12 patients in their case series had undergone in vitro fertilization. In vitro fertilization status could not be reliably assessed in our US study. Still, this issue should serve as a reminder to clinicians to screen patients for atherosclerotic risk factors during evaluation before in vitro fertilization.

Finally, this case series highlights the potentially catastrophic nature of MI during pregnancy and the puerperium. Two of the 12 cases were complicated by myocardial rupture. Dr Senthilkumaran and colleagues identify early physician recognition of acute coronary syndromes in pregnancy as a key opportunity to improve clinical outcomes. This is a critical challenge, since dyspnea, the most frequent presenting symptom of MI in this series, is associated with a broad differential diagnosis in pregnancy. A combination of physician education and ongoing clinical investigation will be required to prevent MI in pregnancy, recognize it when it occurs, and improve maternal outcomes.

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The Importance of Educational Interventions and Regional Analgesia in Tackling the Opioid Crisis in the United States

To the Editor: Ziegelmann et al recently published an interesting report titled “Wide variation in opioid prescribing after urological surgery in tertiary care centers” that strives to shed light on the mounting opioid crisis in the United States. In accordance with previous studies, the analysis revealed a considerable variation in postoperative opioid prescribing patterns both for a given procedure and among procedures. This was ascribed to patient-related factors such as younger age, male sex, cancer diagnosis, and prolonged hospital stay and more importantly to lack of standardization and physician and patient expectations.

Combating the current opioid epidemic in the United States and the evolving one in Europe necessitates a multipronged strategy that targets patients, health care professionals, and pharmaceutical companies and ensures a fine balance between patients’ need for pain relief and the risk of opioid misuse. Many of the current initiatives are however directed toward the “supply side,” which involves measures such as limiting opioid prescription by physicians and prescribing drug monitoring programs.2 Meanwhile, the “demand side” of the equation warrants more attention. A recent study by Hartford et al3 reported that the adoption of the Standardization of Outpatient Procedure (STOP) narcotics intervention has significantly curbed opioid prescribing and utilization (P<.001) and improved pain control quality (P<.001) in patients undergoing general surgical procedures. In addition to health care provider education, which included surgeons, anesthetists, residents, and nurses, the interventions comprised patient education focusing on pain expectations and the appropriate use and disposal of medications and multimodal analgesia with opioid reduction strategies. Recently, we demonstrated that the integration of regional analgesia, notably transversus abdominis plane block, within the context of a standardized approach for postoperative pain management in patients undergoing day case surgeries, has significantly reduced opioid requirements (P<.001) and improved pain
control and patient satisfaction (P<.001). Our findings were further substantiated by recent evidence demonstrating the efficacy of transversus abdominis plane block in enhancing postoperative recovery and minimizing opioid requirements in patients undergoing major surgical procedures such as living donor hepatectomy.³

To date, the adopted prescription opioid control policies for acute pain in patients undergoing surgical procedures are in large part driven by common sense and focus mainly on the duration of use, which is often linked with risks of dependence and unused medication diversion. Nonetheless, measures limiting prescribing may not be in the best interest of every patient, as many patients require no opioids, whereas others who have contraindications to nonopioid analgesic agents or lack access to timely follow-up may require longer treatment. Although more evidence is awaited, additional efforts should be devoted to improve patient education and to use effective alternatives to opioids. Moreover, an individualized approach to opioid prescription based on procedure-specific and risk rather than days' supply, particularly in opioid-naive patients, seems more appropriate.

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In Reply—The Importance of Educational Interventions and Regional Analgesia in Tackling the Opioid Crisis in the United States

Overprescribing opioids has true risks for our patients. A study by Sanger et al⁴ found that more than half of patients in a methadone maintenance treatment program were introduced to opioids through a prescription. This carries particular relevance for surgeons, who prescribe a significant portion of all opioids, including many for patients without a history of exposure.²³

Optimal prescribing practices therefore toe the delicate line between providing adequate pain control and minimizing the risk of medication misuse and abuse.³ This has important implications for the patient and society as a whole.

We agree with Hamid and Khan, who rightly point out that both provider and patient education are mandatory to make the successful transition to multimodal postoperative pain control protocols for surgical procedures. Education must also be provided for nurses, pharmacists, and others who interface with patients during their postoperative care to ensure a smooth transition and to reinforce expectations.⁵⁶ At our institutions, efforts have been made to educate all members of the surgical team through department-wide presentations on our role in the opioid crisis. However, the importance of physician overprescribing cannot be overstated. Howard et al⁷ found that the quantity of opioids prescribed by physicians postoperatively was an independent risk factor for the quantity of opioids consumed. Thielis et al⁸ prospectively surveyed nearly 2500 patients who underwent various surgical procedures at Mayo Clinic (Rochester, Scottsdale, and Jacksonville campuses). They found that more than 75% of patients had leftover opioids and more than 60% of prescribed pills went unused. This and other studies emphasize the discrepancy between provider and patient expectations regarding postoperative pain management. Without proper prescribing practices, any change in demand through patient education would simply widen the gap of unused opioids.

The question of how to best address this disconnect is not entirely clear. In addition to enhanced recovery protocols, it seems logical to find ways to standardize postoperative pain control. Others⁹ have found success with postoperative prescribing guidelines. On the basis of the observed variation in opioid prescribing practices at our institutions, we became determined to take steps toward a more consistent approach. Recently, we also created a tiered guideline for postoperative opioid prescribing after common urologic surgical procedures. This was based