The nation’s drug overdose epidemic: Helping children and families, patients with pain

• Rita Agarwal MD, FAAP, FASA
• Clinical Professor of Anesthesiology
• Stanford University
• agarwalr@Stanford.edu @ritaagarwal6
Disclosures

• No financial

• Immediate past president of the Society for Pediatric Pain Medicine @pedspainmed., www.pedspainmed.org

• Past Chair: AAP Section on Anesthesiology and Pain Medicine

• AAP Committee on Substance Use Prevention
Consequences of Untreated Pain

- Prolonged stress response
- Reduced immune competence
- Cardiovascular instability
- Respiratory dysfunction
- Genitourinary disturbances
- Decreased gastrointestinal motility
- Metabolic imbalance
- Developmental issues
- Increased chronic postsurgical pain syndromes

Unrelieved Pain
Opioids

- The mainstay of pain medications
- A variety of routes are available
- A variety of modalities
Multimodal Analgesics

COX INHIBITOR(S)

KETAMINE

OPIOID-SPARING ANALGESIA

α2-ADRENERGIC

ANTI-NEUROPATHIC

Courtesy of: Stephen Robert Hays, MS, MD, FAAP
Clinical Professor, Anesthesia & Pediatrics
University of Iowa Carver College of Medicine
Multimodal ANALGESIA

ANALGESIC AGENTS (LA)

ADJUVANT/CAM

FUNCTIONAL RECOVERY

PM&R

MENTAL HEALTH CARE

Courtesy of: Stephen Robert Hays, MS, MD, FAAP
Clinical Professor, Anesthesia & Pediatrics
University of Iowa Carver College of Medicine
Non-Opioid Approaches

- NSAIDs COX 2 inhibitors and Acetaminophen
- Clonidine – multiple routes
- Gabapentenoids
- Ketamine
- Lidocaine/Local anesthesia
- Distraction - VR/storytelling/bubbles/video games
- Biofeedback, self hypnosis, breathing
Adjuvant Medications: Ketamine

- NMDA Antagonist
- Dissociate anesthetic
- Multiple routes
- Bolus or continuous infusion
- Potent analgesic and sedative
- Common drug of misuse

Adjuvant Medications: Gabapentin/Pregabalin

• Anticonvulsants
• Calcium channel blocker/influx
• Perioperative-ERAS, multimodal analgesia
• Duration, efficacy ??
• Respiratory Depression
• Can be Abused
Opioid Prescriptions

- 185 ambulatory surgery patients
- Mean age 9 (range 0-17)
- Median doses prescribed 12 9 range 9-20)
- Median 2 dose consumed
- 90% had leftover opioids
- 42% disposed of leftovers

Anesth Analg. 2022 Jan 1;134(1):133-140
Opioid Prescribing for the Treatment of Acute Pain in Children on Hospital Discharge.
Monitto, Constance; et.al

Figure 1. Doses dispensed and consumed by surgical specialty.
*General pediatric surgery excluding Nuss procedure. **Orthopedic surgery excluding posterior spinal fusion. Card indicates cardiothoracic surgery; GU, genitourologic surgery; Neuro, neurosurgery; Pectus, Nuss procedure; Plastic, plastic surgery; PSF, posterior spinal fusion.
Figure 2. Duration of opioid use by specialty. Duration of opioid therapy reported by families after hospital discharge. Data are stratified by primary service.
Association of Opioids Prescribed to Family Members With Opioid Overdose Among Adolescents and Young Adults

Anh P. Nguyen, PhD\textsuperscript{1}; Jason M. Glanz, PhD\textsuperscript{1,2}; Komal J. Narwaney, PhD\textsuperscript{1}; et al

Association of Opioid Prescriptions and Pharmaceutical Opioid Overdose During Past 3-Month, 6-Month, and 12-Month Exposures

<table>
<thead>
<tr>
<th>Opioid Prescriptions</th>
<th>Past 3 Months (aHR (95% CI))</th>
<th>Past 6 Months (aHR (95% CI))</th>
<th>Past 12 Months (aHR (95% CI))</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Prescription</td>
<td>[Reference]</td>
<td>[Reference]</td>
<td>[Reference]</td>
</tr>
<tr>
<td>Prescriptions to Family Members</td>
<td>1.85 (1.11 – 3.11)</td>
<td>1.93 (1.19 – 3.13)</td>
<td>1.74 (1.02 – 2.98)</td>
</tr>
<tr>
<td>Prescriptions to Youth</td>
<td>5.86 (3.33 – 10.30)</td>
<td>4.65 (2.69 – 8.04)</td>
<td>3.93 (2.23 – 6.92)</td>
</tr>
<tr>
<td>Prescriptions to Youth and Family Members</td>
<td>6.56 (2.87 – 14.99)</td>
<td>3.68 (1.71 – 7.89)</td>
<td>4.46 (2.36 – 8.43)</td>
</tr>
</tbody>
</table>

Abbreviations: aHR = adjusted hazard ratio; CI = confidence interval
Medicine Safety for Children and Teens: We All Play a Role

DO NOT share prescribed medicines with anyone, including family members.
DO NOT save prescribed medicines, unless told to do so by your doctor.
DO secure all medicines up and out of reach of children and teens.
DO make sure children and teens take their medicines correctly.
DO follow all the instructions from your doctor or pharmacist.
DO talk with your child’s doctor if you have any questions.
DO get rid of all old or unused medicines.
- Follow the instructions on the medicine label or package insert. Only flush medicines if the label says it is okay to do so.
- If the label doesn’t give instructions, look for a “take back program” in your community.
- If instructions and “take back programs” are not available, take the medicine out of the original container and mix it with used coffee grounds, dirt, or kitty litter, and throw in the trash.
- Visit www.healthychildren.org/medicinesafety for details.
Conclusion

Children deserve excellent pain management
Multimodal analgesia
Consider local anesthesia or regional anesthesia
Decrease mismatch between prescription and need
Questions

• agarwalr@Stanford.edu

• Twitter: ritaagarwal6

• Society for Pediatric Pain Medicine
  https://pedspainmedicine.org/

• American Academy of Pediatrics