Episode 158: Hepatic (Adv) and PACU (Basic)

On this episode: Drs. Gillian Isaac and Jed Wolpaw

In this 158th episode we return with another keywords episode with Dr. Gillian Isaac. We discuss hepatic disease for the advanced exam and PACU care for the basic exam.

All Keyword Episodes

Questions & Notes

Click → jump to answers/notes.

HEPATIC (ADVANCED)

Preoperative Care

Pt w/ cirrhosis presents for liver transplantation likely to exhibit each of following except?

A. ↓ cardiac output
B. ↓ Serum glucose conc
C. ↓ Systemic vasc resistance
D. ↑ alveolar oxygen tension

- Discussion

Pt w/ chronic liver failure scheduled for liver transplantation. Which following preop findings most likely?

A. Hypoxemia
B. ↑ Platelet count
C. ↑ Systemic vascular resistance
D. ↑ Factor VIII
E. Metabolic alkalosis

Discussion

Pt w/ liver transplantation 2 years ago now requires GA for ENT surgery. Antirejection on cyclosporine and prednisone. Which of following most likely?

A. Hypoalbuminemia
B. Hypocalcemia
C. Episodic hypoglycemia
D. ↑ Creatinine
E. Prolong prothrombin time

Discussion

50F w/ severe portal hypertension scheduled for TIPS procedure. Which cardiovascular physiology change expected?

A. ↓ HR
B. ↑ SVR
C. ↑ HBF
D. ↑ Renal BF
E. ↑ Mixed venous O2

Discussion

58F awaiting orthotopic liver transplantation for primary biliary cirrhosis in ICU. Oximetric pulmonary catheter placed. SvO2 90. BP 80/50. Which following BP intervention least appropriate treatment for hypotension in this patient?

A. Milrinone
B. Norepinephrine
C. Vasopressin
D. Phenylephrine
Discussion

Intraoperative Care

Man with alcoholic cirrhosis and Hgb 10. Intraop PaO2 75mmHg, FiO2 0.5. Which of following most likely cause of low PaO2?

A. Anemia
B. ↓ CO
C. ↑ dead space
D. Intrahepatic AV shunt
E. Intrapulmonary AV shunt
Discussion

Phase of liver transplantation where greatest degree of hemodynamic instability expected?

A. Induction
B. Dissection
C. Anhepatic
D. Reperfusion
Discussion

During liver transplantation, Veno-venous bypass from femoral and portal vein to axillary vein during cross-clamp of IVC will?

A. ↓ Urine output

B. Prevent hypothermia

C. Prevent metabolic acidosis

D. Requires heparinization

E. Supports cardiac output

Discussion

Pt undergoing liver transplantation. Sodium bicarbonate and calcium chloride are administered immediately before reperfusion of transplanted liver to counteract?

A. Coagulopathy
B. ↓ Cardiac output
C. Hyperkalemia
D. Hypermagnesemia
E. Hypotension
Discussion

Postoperative care

45M w/ chronic alcoholism developed jaundice 4 days after cholecystectomy undergoing halothane-morphine GA. Bilirubin and alk. Phos. ↑, but AST slightly above normal. All values within normal limits preoperatively. Most likely cause of jaundice?

A. Opioid-induced spasm of Sphincter of Oddi
B. Hepatic dysfunction 2/2 halothane exposure
C. Worsening of underlying chronic hepatitis
D. Extra-hepatic biliary obstruction
E. Acute viral hepatitis
Discussion

Normotensive 66M undergoes total hip arthroplasty. MAP maintained at 60mmHg with isoflurane and labetalol, FiO2 1.0, 8 units pRBC administered intraoperatively due to femoral artery injury. Five days later developed jaundice. Which of following most likely cause?

A. Delayed hemolysis from transfusion

B. Heart failure w/ hepatic congestion
C. Hepatocellular injury from labetalol
D. Intraoperative hypotension
E. Isoflurane-associated hepatitis
Discussion

25F undergoes difficult cholecystectomy with isoflurane, N2O, fentanyl, vecuronium. 5 units pRBC administered intraoperatively. Two days later develops mild ↑ transaminases, markedly ↑ alk. phos. and biliriubin. Which of following most likely cause?

A. Acute viral hepatitis
B. Hemolysis
C. Isoflurane-induced liver dysfunction
D. Retained common duct stone
E. Sepsis
Discussion

POSTOPERATIVE CARE (BASIC)

32M addicted to opioids c/o pain in PACU one hour after fixation of mandibular fracture. Received IV morphine 30mg in past hour. Most appropriate management?

A. Continued IV morphine until pain resolves
B. IV nalbuphine in 5mg increments until pain resolves
C. IM hydroxyzine 75mg
D. Evaluation of entrapment of mandibular nerve
E. Evaluation of drug-seeking behavior
Discussion

Which of following limits nalbuphine for postop pain?

A. High incidence of nausea and vomiting
B. High incidence of delayed respiratory depression
C. Potential for inducing seizures in repeated doses
D. Relatively low maximal analgesic effect
E. Short duration of action
Discussion

75M in PACU c/o severe pain following thoracotomy. RR 30. ABG PaO2 70, PaCO2 56, pH 7.28, FiO2 0.6. Pt received morphine 2mg via thoracic epidural 45min earlier. Which following most appropriate immediate management?

A. IV naloxone
B. Epidural morphine
C. Epidural 0.125% bupivacaine
D. Epidural fentanyl
E. Tracheal Intubation
Discussion

Pt has severe pain after total knee arthroplasty. Systemic opioids most likely modify pain through action of which of following sites?

A. Corpus callosum
B. Hippocampus
C. Substantia gelatinosa
D. Substantia nigra
E. Ventral horn of spinal cord
Discussion:

2 hours after vertical gastric banding procedure under desflurance and remifentanil, trochar removed and wound is closed. Upon emergence, which of following is most likely scenario?

A. Adequate analgesia for 2 hours
B. Delayed emergence from narcotic
C. Pain
D. Respiratory depression in PACU

Discussion

50M w/ 80-pk year history of cigarette smoking has FEV1 1.5L, FVC 3.5L. Which of following statements re: postop mgt is true?

A. Antagonism of neuromuscular block most likely to trigger acute bronchospasm
B. FRC increase during acute exacerbation of bronchospasm
C. Ketamine will increase airway resistance
D. Morphine contraindicated

Discussion

In PACU, pt has severe hypotension, bronchospasm, edema of alveolar airway after injection of morphine for pain relief. Most appropriate immediate treatment?

A. Diphenhydramine
B. Epinephrine
C. Methylprednisolone
D. Phenylephrine
E. Ranitidine

Discussion

Measurement of which of following provides most reliable info for severity of bronchospasm?

A. Diffusing capacity
B. ERC
C. FEV1
D. Residual volume
E. TLC

Discussion

30F undergoes thyroidectomy under GETA. After extubation while breathing spontaneously has laryngospasm that resolves after 60 seconds of CPAP applied via face mask. In PACU develops shortness of breath, tachypnea, hypoxemia, and rales. Which of following most likely diagnosis?

A. Gastric acid aspiration
B. Myocardial infarction
C. Pulmonary edema
D. Pulmonary embolism
E. Vocal cord paralysis

Discussion

After tracheal extubation, healthy 21M has 30 second episode of laryngospasm w/ marked parasternal and intercostal retractions. Corrected w/ CPAP by mask. In PACU has dyspnea. CXR shows diffuse b/l interstitial edema. Most likely cause is increased?

A. Airway reactivity
B. Intrapleural pressure
C. Left ventricular afterload
D. Right ventricular preload
E. Transpulmonary vascular pressure

Discussion

60M 150kg has episode of severe cough after anesthesia for hip replacement. Three minutes later, SpO2 drops to 80% from 100%. Oral suction noted copious secretions and vomitus in mouth. Exam reveals b/l wheezing. ABG on FiO2 45% is PaO2 52 PaCO2 50, pH 7.32. Most appropriate next step in management?

A. Airway suction, intubation, mech ventilation and observation in ICU
B. Airway suction, intubation, saline lavage
C. Intubation, administer steroids and antibiotics
D. Intubation, administer albuterol
E. Airway suction, intubation, mech ventilation

Discussion

52M in PACU has difficulty maintain SpO2 80% on simple face mask w/ 5L min O2. s/p right upper lobectomy 15 min. ago. Physical exam unremarkable. Chest clear to auscultation. Next most appropriate step in management?

A. Simple mask to partial rebreathing mask
B. Non-rebreather
C. Venturi face mask
D. Nasal cannula (NC) w/ 10L
E. Reintubate

Discussion

44M s/p emergency appendicitis surgery. In PACU, experiencing severe nausea/vomiting. SpO2 on NC down to 90% from 98% w/ expiratory wheezes. Diagnosis of possible aspiration suspected. All of following appropriate initial management of patient except?

A. Chest x-ray
B. Administer broad antibiotics
C. Supplemental O2 via face mask
D. Administer antiemetic medication
E. Continue close observation for pulmonary sequelae

Discussion

Severe PONV most effectively treated with drug that acts as antagonist for which of following receptors?

A. Alpha-adrenergic
B. Beta-adrenergic
C. Dopamine
D. GABA
E. Glutamate

Discussion

19F w/ severe PONV following laparoscopy after IM prochlorperazine has muscle spasm in face, neck, tongue. Which of following most appropriate management?

A. Baclofen
B. Diphenhydramine
C. Epinephrine
D. Hydrocortisone
E. Naloxone

Discussion

Nausea/vomiting in pediatric outpatients are?

A. Directly related to postoperative pain
B. Unrelated to duration of procedure
C. Eliminated by preop admin of Droperidol
D. Eliminated by intraop nasogastric drainage
E. More frequent than adults

Discussion

Which of following clinical situations are contraindicated to use of metoclopramide as premed?

A. Intestinal obstruction, tremors, hepatic dysfunction
B. Diabetic gastroparesis, esophageal reflux
C. Chemotherapy-induced emesis
D. Patients on digoxin and insulin
E. Pregnancy-induced emesis

Discussion

Emergence delirium occurs most often with?

A. Sevoflurane
B. Desflurane
C. Ketamine
D. Propofol

Discussion

65F receives enflurane and pancuronium in lap. cholecystectomy. Three minutes after admin. of 5mg neostigmine, 0.2mg atropine, twitch returns to normal. Spontaneous tidal volume 500ml. ETT removed. In PACU reports dyspnea and appears in distress. Which of following most likely cause of resp. distress?

A. Atelectasis
B. Cholinergic crisis
C. Pain
D. Residual enflurane
E. Residual muscle paralysis

Discussion

Hepatic (Advanced)

ABA Content Outline

2) Hepatic Disease
   a) Preoperative Laboratory Assessment
   b) Anesthesia Choice (Hepatocellular Disease, Ascites, Portal Hypertension)
   c) Postoperative Hepatic Dysfunction, Hepatic Failure, Hepatorenal Syndrome
   d) Hepatic Transplantation

Preoperative Care

4:00

- Liver disease associated with high morbidity and mortality
- Scoring systems to stratify M&M
    - MELD
    - Childs-Pugh
- Advanced parenchymal disease affects nearly every organ function
    - Cardiovascular
        - Hyperdynamic circulation,
        - ↑ Cardiac output (CO)
        - ↓ vascular resistance
        - Hepatic portal HTN
        - Complications (esophageal varices, bleeding airways)
    - Metabolism and synthetic function, bleeding
    - Hepatopulmonary dysfunction
    - Hepatorenal

Pt w/ cirrhosis presents for liver transplantation likely to exhibit each of following except?

5:36

A. ↓ cardiac output
B. ↓ Serum glucose conc
C. ↓ Systemic vasc resistance
D. ↑ alveolar oxygen tension

Discussion

- Answer: A
- D: hepatopulmonary syndrome is effectively a shunt

Pt w/ chronic liver failure scheduled for liver transplantation. Which following preop findings most likely?

6:58

A. Hypoxemia
B. ↑ Platelet count
C. ↑ Systemic vascular resistance
D. ↑ Factor VIII
E. Metabolic alkalosis

Discussion

- Definitely not B or C
- F8 is notably increased
- Likely acidosis

Pt w/ liver transplantation 2 years ago now requires GA for ENT surgery. Antirejection on cyclosporine and prednisone. Which of following most likely?

8:22

A. Hypoalbuminemia
B. Hypocalcemia
C. Episodic hypoglycemia
D. ↑ Creatinine
E. Prolong prothrombin time

Discussion

- Assuming now doing ok with new liver, improved function so should not see A, B, C, E
- Answer D since potentially renally toxic agents

50F w/ severe portal hypertension scheduled for TIPS procedure. Which cardiovascular physiology change expected?

9:57

A. ↓ HR
B. ↑ SVR
C. ↑ HBF
D. ↑ Renal BF
E. ↑ Mixed venous O2

Discussion

- Answer E because limited oxygen extraction capacity, as well as w/ increased cardiac output

58F awaiting orthotopic liver transplantation for primary biliary cirrhosis in ICU. Oximetric pulmonary catheter placed. SvO2 90. BP 80/50. Which following BP intervention least appropriate treatment for hypotension in this patient?

11:32

A. Milrinone
B. Norepinephrine
C. Vasopressin
D. Phenylephrine

Discussion

- Know not A because vasodilating property
- Recognize SvO2 is high, as such in a hyperdynamic state

Intraoperative Care

12:44

- Questions about end-organ dysfunction

14:23

- Liver transplantation described in 3 phases: dissection, anhepatic, neohepatic w/ reperfusion
- Intraoperative management focuses on fluid and vent strategy to minimize acute lung injury and primary graft dysfunction

Man with alcoholic cirrhosis and Hgb 10. Intraop PaO2 75mmHg, FiO2 0.5. Which of following most likely cause of low PaO2?

12:58

A. Anemia
B. ↓ CO
C. ↑ dead space
D. Intrahepatic AV shunt
E. Intrapulmonary AV shunt

Discussion

- High A-a gradient. Hepatopulmonary syndrome → intrapulmonary AV shunts → hypoxemia
- B: will cause ↓ SVO2 but not change A-a gradient
- C: ↑ CO2, but not PaO2 unless severe
- D: not this typical picture

Phase of liver transplantation where greatest degree of hemodynamic instability expected?

14:59

A. Induction
B. Dissection
C. Anhepatic
D. Reperfusion

Discussion

- D: when all the toxins built up in lower body from clamped IVC will return to heart

During liver transplantation, Veno-venous bypass from femoral and portal vein to axillary vein during cross-clamp of IVC will?

16:11

A. ↓ Urine output
B. Prevent hypothermia
C. Prevent metabolic acidosis
D. Requires heparinization
E. Supports cardiac output

Discussion

- This gets around cross-clamp of IVC so returns some blood that otherwise would not have. Thus ↑ venous return will ↑ cardiac output, thus shouldn't ↓ UO (A)
- D is more for cardiopulmonary bypass

Pt undergoing liver transplantation. Sodium bicarbonate and calcium chloride are administered immediately before reperfusion of transplanted liver to counteract?

17:17

A. Coagulopathy
B. ↓ Cardiac output
C. Hyperkalemia
D. Hypermagnesemia
E. Hypotension

Discussion

- Worried about the buildup of potassium returning to heart and subsequent arrest

Postoperative care

17:59

- Risk of developing perioperative hepatic dysfunction varies w/ pre-existing reserve status, presence of co-morbid conditions, type, duration of surgery

45M w/ chronic alcoholism developed jaundice 4 days after cholecystectomy undergoing halothane-morphine GA. Bilirubin and alk. Phos. ↑, but AST slightly above normal. All values within normal limits preoperatively. Most likely cause of jaundice?

18:23

A. Opioid-induced spasm of Sphincter of Oddi
B. Hepatic dysfunction 2/2 halothane exposure
C. Worsening of underlying chronic hepatitis
D. Extra-hepatic biliary obstruction
E. Acute viral hepatitis

Discussion

- B is distraction – is very rare
- Common things being common, most common reason for anyone is D

Normotensive 66M undergoes total hip arthroplasty. MAP maintained at 60mmHg with isoflurane and labetalol, FiO2 1.0, 8 units pRBC administered intraoperatively due to femoral artery injury. Five days later developed jaundice. Which of following most likely cause?

20:06

A. Delayed hemolysis from transfusion
B. Heart failure w/ hepatic congestion
C. Hepatocellular injury from labetalol
D. Intraoperative hypotension
E. Isoflurane-associated hepatitis

Discussion

- Postoperative jaundice most likely from reabsorption of hematoma or RBC breakdown after transfusion
- D can cause shock liver but would see elevated AST/ALT not biliary enzymes

25F undergoes difficult cholecystectomy with isoflurane, N2O, fentanyl, vecuronium. 5 units pRBC administered intraoperatively. Two days later develops mild ↑ transaminases, markedly ↑ alk. phos. and biliriubin. Which of following most likely cause?

22:19

A. Acute viral hepatitis
B. Hemolysis
C. Isoflurane-induced liver dysfunction
D. Retained common duct stone
E. Sepsis

Discussion

- More common is D, than B
- Shouldn't see ↑ transaminase from B

Postoperative Care (Basic)

ABA Content Outline

7. Postoperative Care

a. Pain Relief

1) Pharmacologic

a) Drugs: Opioids, Agonist-Antagonists, Local Anesthetics, Alpha-2 Agonists, Nonsteroidal Anti-Inflammatory Drugs (NSAIDs), *N*-Methyl-D-Aspartate (NMDA) Receptor Blockers, tricyclic antidepressants (TCA), Selective Serotonin Reuptake Inhibitor (SSRI)

b) Routes: Oral, Subcutaneous (SC), Transcutaneous, Transmucosal, Intramuscular (IM), Intravenous (IV), Including Patient-Controlled Analgesia (PCA), Epidural, Spinal, Interpleural, Other Regional Techniques

2) Other Techniques; Transcutaneous Electrical Nerve Stimulation (TENS); Cryotherapy; Acupuncture, Hypnosis

b. Respiratory Consequences of Anesthesia and of Surgical Incisions

c. Cardiovascular Consequences of General and Regional Anesthesia: Differential Diagnosis and Treatment of Postoperative Hypertension and Hypotension

d. Nausea and Vomiting

1) Physiology; Etiology; Risk Factors, Preventive Strategies

2) Use of Antacids, Histamine-2 (H2) Blockers, Metoclopramide, Transdermal Scopolamine, Droperidol, Serotonin Antagonists, Proton Pump Inhibitors, Dexamethasone, Multimodal Therapy, Acupressure/Acupuncture

e. Neuromuscular Consequences: Residual Paralysis, Muscle Soreness, Recovery of Airway Reflexes

f. Neurologic Consequences of Anesthesia: Confusion, Delirium, Cognitive Dysfunction, Failure to emerge from anesthesia

24:19

- Pain relief
- Opioids (duration, side effects, mechanism), opioid-sparing techniques

33:42

- Respiratory consequences of anesthesia

- Life-threatening: aspiration pneumonitis, negative pulmonary pressure edema after laryngospasm, severe bronchospasm
- Common: hypoxia, mild bronchospasm

44:00

- Nausea/vomiting prevention, treatment, pharmacology, risk factors
- Neuromuscular consequences

32M addicted to opioids c/o pain in PACU one hour after fixation of mandibular fracture. Received IV morphine 30mg in past hour. Most appropriate management?

26:49

A. Continued IV morphine until pain resolves
B. IV nalbuphine in 5mg increments until pain resolves
C. IM hydroxyzine 75mg
D. Evaluation of entrapment of mandibular nerve
E. Evaluation of drug-seeking behavior

Discussion

- Immediate postop period, known to be painful. Continue treating pain

Which of following limits nalbuphine for postop pain?

28:41

A. High incidence of nausea and vomiting
B. High incidence of delayed respiratory depression
C. Potential for inducing seizures in repeated doses
D. Relatively low maximal analgesic effect
E. Short duration of action

Discussion

- As a partial agonist, will have a ceiling effect (D)

75M in PACU c/o severe pain following thoracotomy. RR 30. ABG PaO2 70, PaCO2 56, pH 7.28, FiO2 0.6. Pt received morphine 2mg via thoracic epidural 45min earlier. Which following most appropriate immediate management?

29:40

A. IV naloxone
B. Epidural morphine
C. Epidural 0.125% bupivacaine
D. Epidural fentanyl
E. Tracheal Intubation

Discussion

- In pain but signs of not great respiratory status (hypercarbia, hypoxemic) thus C can treat pain w/o worsening respiration

Pt has severe pain after total knee arthroplasty. Systemic opioids most likely modify pain through action of which of following sites?

31:31

A. Corpus callosum
B. Hippocampus
C. Substantia gelatinosa
D. Substantia nigra
E. Ventral horn of spinal cord

Discussion:

- Answer is C
- E is actually dorsal horn

2 hours after vertical gastric banding procedure under desflurane and remifentanil, trochar removed and wound is closed. Upon emergence, which of following is most likely scenario?

32:11

A. Adequate analgesia for 2 hours
B. Delayed emergence from narcotic
C. Pain
D. Respiratory depression in PACU

Discussion

- Remi is short-acting, be ready to give analgesia once worn off

50M w/ 80-pk year history of cigarette smoking has FEV1 1.5L, FVC 3.5L. Which of following statements re: postop mgt is true?

34:11

A. Antagonism of neuromuscular block most likely to trigger acute bronchospasm
B. FRC increase during acute exacerbation of bronchospasm
C. Ketamine will increase airway resistance
D. Morphine contraindicated

Discussion

- A: maybe confused with vecuronium histamine release, but reversals do not
- C: bronchodilation
- B: can't get air out during bronchospasm, thus hyperinflate → ↑ FRC

In PACU, pt has severe hypotension, bronchospasm, edema of alveolar airway after injection of morphine for pain relief. Most appropriate immediate treatment?

35:34

A. Diphenhydramine
B. Epinephrine
C. Methylprednisolone
D. Phenylephrine
E. Ranitidine

Discussion

- Anaphylaxis treatment is epinephrine

Measurement of which of following provides most reliable info for severity of bronchospasm?

36:21

A. Diffusing capacity
B. ERC
C. FEV1
D. Residual volume
E. TLC

Discussion

- C: can follow albuterol treatment with FEV1 measurements

30F undergoes thyroidectomy under GETA. After extubation while breathing spontaneously has laryngospasm that resolves after 60 seconds of CPAP applied via face mask. In PACU develops shortness of breath, tachypnea, hypoxemia, and rales. Which of following most likely diagnosis?

37:06

A. Gastric acid aspiration
B. Myocardial infarction
C. Pulmonary edema
D. Pulmonary embolism
E. Vocal cord paralysis

Discussion

- From negative pressure pulmonary edema, which is treated w/ supportive care
- Lasix is not correct initial management
- Usually resolves within 8-12 hours

After tracheal extubation, healthy 21M has 30 second episode of laryngospasm w/ marked parasternal and intercostal retractions. Corrected w/ CPAP by mask. In PACU has dyspnea. CXR shows diffuse b/l interstitial edema. Most likely cause is increased?

38:19

A. Airway reactivity
B. Intrapleural pressure
C. Left ventricular afterload
D. Right ventricular preload
E. Transpulmonary vascular pressure

Discussion

- Similar to previous question, but asking about mechanism (E).

60M 150kg has episode of severe cough after anesthesia for hip replacement. Three minutes later, SpO2 drops to 80% from 100%. Oral suction noted copious secretions and vomitus in mouth. Exam reveals b/l wheezing. ABG on FiO2 45% is PaO2 52 PaCO2 50, pH 7.32. Most appropriate next step in management?

38:58

A. Airway suction, intubation, mech ventilation and observation in ICU
B. Airway suction, intubation, saline lavage
C. Intubation, administer steroids and antibiotics
D. Intubation, administer albuterol
E. Airway suction, intubation, mech ventilation

Discussion

- Aspiration pneumonitis treatment: A

52M in PACU has difficulty maintain SpO2 80% on simple face mask w/ 5L min O2. s/p right upper lobectomy 15 min. ago. Physical exam unremarkable. Chest clear to auscultation. Next most appropriate step in management?

41:22

A. Simple mask to partial rebreathing mask
B. Non-rebreather
C. Venturi face mask
D. Nasal cannula (NC) w/ 10L
E. Reintubate

Discussion

- Answer: B
- Lots of room to improve on O2 delivery
- Venturi face mask entrains room air

44M s/p emergency appendicitis surgery. In PACU, experiencing severe nausea/vomiting. SpO2 on NC down to 90% from 98% w/ expiratory wheezes. Diagnosis of possible aspiration suspected. All of following appropriate initial management of patient except?

42:42

A. Chest x-ray
B. Administer broad antibiotics
C. Supplemental O2 via face mask
D. Administer antiemetic medication
E. Continue close observation for pulmonary sequelae

Discussion

- Most times not administer antibiotics right away because is just pneumonitis, not pneumonia

Severe PONV most effectively treated with drug that acts as antagonist for which of following receptors?

44:46

A. Alpha-adrenergic
B. Beta-adrenergic
C. Dopamine
D. GABA
E. Glutamate

Discussion

- Did not include serotonergic
- Answer: C

19F w/ severe PONV following laparoscopy after IM prochlorperazine has muscle spasm in face, neck, tongue. Which of following most appropriate management?

45:16

A. Baclofen
B. Diphenhydramine
C. Epinephrine
D. Hydrocortisone
E. Naloxone

Discussion

- Getting at too much dopaminergic action – neuroleptic malignancy syndrome
- B: antihistamine with antidopaminergic effects

- Extrapyramidal symptoms up to 2% at low doses

Nausea/vomiting in pediatric outpatients are?

46:31

A. Directly related to postoperative pain
B. Unrelated to duration of procedure
C. Eliminated by preop admin of Droperidol
D. Eliminated by intraop nasogastric drainage
E. More frequent than adults

Discussion

- Answer: A

Which of following clinical situations are contraindicated to use of metoclopramide as premed?

47:33

A. Intestinal obstruction, tremors, hepatic dysfunction
B. Diabetic gastroparesis, esophageal reflux
C. Chemotherapy-induced emesis
D. Patients on digoxin and insulin
E. Pregnancy-induced emesis

Discussion

- Answer: A
- Also contraindicated for patients on Parkinson medication

Emergence delirium occurs most often with?

48:54

A. Sevoflurane
B. Desflurane
C. Ketamine
D. Propofol

Discussion

- Answer: A

65F receives enflurane and pancuronium in lap. cholecystectomy. Three minutes after admin. of 5mg neostigmine, 0.2mg atropine, twitch returns to normal. Spontaneous tidal volume 500ml. ETT removed. In PACU reports dyspnea and appears in distress. Which of following most likely cause of resp. distress?
49:31

A. Atelectasis
B. Cholinergic crisis
C. Pain
D. Residual enflurane
E. Residual muscle paralysis

Discussion

- E: Pancuronium is long-acting neuromuscular blocker that can cause re-curarization