

PROTOCOL FOR: Ketamine (IM): Use for Pediatric Patients

- POLICY:
1. Ketamine is administered intramuscularly for conscious sedation of pediatric patients in the E.D.
 2. ED attending informs parent/guardian and obtains consent for sedation procedure.
 3. Patients receiving Ketamine IM in the ED must be placed on cardiac and oxygen saturation monitors.
 4. ED attending is responsible for the decision to discharge the patient.

- DESIRED
PATIENT OUTCOMES:
1. Patient will have effective pain control and relaxation for procedure with safe return to full consciousness.
 2. Patient will not suffer negative side effects of ketamine.

INDICATIONS: Ketamine IM is used for conscious sedation procedures in pediatric patients to include but not be limited to laceration repair, burn debridement, foreign body removal, abscess incision and drainage, lumbar puncture and orthopedic procedures.

- ABSOLUTE
CONTRAINDICATIONS:
1. Age 3 months or less.
 2. Active pulmonary infection or disease.
 3. History of tracheal instability/tracheal surgery/tracheal stenosis.
 4. Cardiovascular disease.
 5. Prior adverse reaction to ketamine.
 6. Psychosis.

- RELATIVE
CONTRAINDICATIONS:
1. Procedures involving stimulation of the posterior pharynx.
 2. Head injury associated with loss of consciousness or altered mental status.
 3. CNS lesions/hydrocephalus of other condition associated with increased intracranial pressure.

PROTOCOL FOR: Ketamine (IM): Use for Pediatric Patients

4. Glaucoma/acute globe injury.
5. Thyroid disorder or medication.
6. Porphyria.

ASSOCIATED

STANDARDS: HAM: Conscious Sedation #08-013

DOSE: IM ketamine 2-4 mg/Kg (If repeat dose is necessary, the combined dose should not exceed 6 mg/Kg)

OPTIONAL: Atropine 0.01 mg/Kg (min = 0.1 - max = 0.3)
Midazolam 0.1 mg/Kg (max = 4 mg) (some feel midazolam is unnecessary for patients under 7)

CLINICAL
ASSESSMENT

- AND CARE:
1. Obtain history of allergies and past medication reactions, present medications, and medical/surgical history (including conscious sedation history).
 2. Perform and record baseline vital signs, LOC, and oxygen saturation prior to administration. During procedure and until procedure is complete and patient is awake, vital signs and oxygen saturation are monitored q 5 min. then q 15 min. in recovery period. Patients should be observed in the Emergency Department at least one hour after last administration of medication. Physician should be available but need not be at bedside during recovery.
 3. Obtain weight.
 4. Check that all necessary emergency equipment is available.
 5. Administer ketamine IM (alone or in combination) about 5 minutes prior to procedure (duration of sedation is approximately 25 minutes).
 6. Position patient to facilitate procedure and assure airway patency.
 7. Administer oxygen to maintain oxygen saturation of 97%.
 8. Suction oral secretions as needed gently.

PROTOCOL FOR: Ketamine (IM): Use for Pediatric Patients

9. To counteract emergence reaction - provide an environment when possible with decreased stimulation, low lights and noise levels.

POTENTIAL
COMPLICATIONS:

Hypertension and tachycardia minimized with IM route (prevented with benzodiazepines), hypersalivation 20% (reduced with atropine to 14% mild not requiring intervention), emergence reaction 10% (under age 10 which is minimized with benzodiazepine), long term flashbacks (limited to case reports), respiratory depression (requiring intubation 0%), nausea, emesis 43%), aspiration (requiring intubation 0% in ages >3 months), transient rash 1%, transient stridor or laryngospasm 2% (requiring intubation 0.017%)

TREATMENT OF
ADVERSE REACTIONS:

Hypersalivation (atropine .01 mg/kg), emergence reaction (midazolam 0.1 mg/kg), respiratory depression (O2, bagging, intubation), cardiovascular effects (supportive care).

REPORTABLE
CONDITIONS:

Notify Emergency Department Attending M.D. of the following:

1. Any 10% change in vital signs.
2. Respiratory depression or decreased oxygen saturation <97%.
3. Any significant findings on follow-up call to patient the next day.

DISCHARGE CRITERIA: 1. Pediatric patients should meet post-procedure discharge criteria per Conscious Sedation/Analgesia Flow Sheet

PATIENT TEACHING: Review Emergency Department discharge instruction sheet with the patient/guardian.

DOCUMENTATION: E.D. Record and Conscious Sedation/Analgesia Flow Sheet

APPROVAL: Nursing Standards Committee

EFFECTIVE DATE: 10/97

REVISION DATE: 10/99, 12/02

PROTOCOL FOR: Ketamine (IM): Use for Pediatric Patients

REVIEW DATE: 2/06, 11/08