

NAME	BARBITURATES	PROPOFOL	KETAMINE	ETOMIDATE
STRUCTURE	THIOPENTAL    METHOHEXITOL			
	DERIVATIVE OF BARITURIC ACID UREA + MALONIC ACID BASIC STRUCTURE SIDE CHAINS AND SUBSTITUTIONS DENOTE ACTIVITY AND SIDE EFFECTS SULFA- INCREASED LIPID SOL. CH3- SHORT ACTING BUT CONVULSANT PROPERTIES BRANCH CHAIN- ANTICONVUL.	ALKYLPHENOL 2,6,-DIISOPROPYLPHENOL Mw 178	PHENCYCLIDINE DERIV. RACEMIC MIXTURE S-MORE ANALGESIA RAPID METABOLISM FEWER EMERGENCE REACTIONS M.W. 238	CARBOXYLATED IMIDAZOLE WATER SOLUBLE AT PHYSIOLOGIC pH ONLY DEXTRO ISOMER IS ACTIVE
PREPAR- ATION	DRUG +ANHYDROUS SODIUM CARBONATE pH 10-11 ANTIMICROBIAL PROPERTY STABLE ONE WEEK IN FRIDGE IF MIX WITH ACIDIC DRUGS PRECIPITATE IN IV IE. SUCCINYLCHOLINE, PANC, VEC, ATRAC, ALFENT, SUF, MIDAZOLAM	1% SOL'N IN 10% SOYBEAN OIL 2.25 %GLYCEROL 1.2% EGG PHOSPHATIDE  GOOD BACTERIAL MEDIUM EDTA METABISULFITE DILUTE WITH DSW	CHLOROBUTANOL AS SOLVENT- NEUROTOXIC THEREFORE AVOID INTRATHECAL OR EPIDURAL	0.2% SOL'N 35% PROPYLENE GLYCOL pH 6.9--PAINFUL LITTLE RISK OF PRECIP.
MECHANISM	INTERACT WITH GABA A ENHANCE ACTION OF GABA MIMIC GABA AT ANESTH CONC. HYPERPOLARIZE POSTSYNAPTIC MEMBRANE INCREASE CL CONDUCTION INHIBIT SYNAPTIC TRANSMISSION OF GLUTAMATE AND Ach	ACT AT B1 SUBUNIT OF GABA NMDA RECEPTOR NOT ANTIANALGESIC	NMDA RECEPTORS TO PRODUCE ANESTHESIA OPIOD RECEPTORS Mu, Delta, Kappa MUSCARINIC ANTAG DELERIUM, BRONCHODIL SNS ACTION	GABA ? REVERSED BY GABA ANTAGONISTS
PHARMKIN	VOL. D(l/kg) 2.5+/-1.0 2.2+/-0.7 CL(ml/min/kg) 3.4+/-0.5 10.9+/-10 ELIM 1/2(hrs.) 11.6+/-6 3.9+/-2.1 80% PROTEIN pH CHANGES AFFECT IONIZAT. ACIDOSIS INCREASED EFFECT	3.4-4.5 30-60 0.5-1.5 GLUCORONIDATION - INACTIVE SOME EXTRAHEPATIC	2.5-3.5 16-18 2-3hrs TO NORKETAMINE( 20-30% ACTIVITY) TO HYDROXY- NORKET	INACTIVE METAB. KIDNEY ELIM. 2.2-4.5 10--20 2--5 75% PROTEIN BINDING RAPID ONSET 30 SECS

**PHARMODYN**

INDIVIDUAL VARIATION  
HYPOVOLEMIA MORE TO BRAIN AND

SAME PRINCIPLES  
NOT IN PREG

SAME PRINCIPLE AS BARB

	LESS REDISTRIBUTION AWAY LEAN BODY MASS DECREASED WITH AGE, AGE INCREASED VOL.D IN KIDS NEED MORE DECREASED IN ELDERLY 25-30% RENAL FAILURE INCREASED VOL. BUT DECREASE PROTEIN. SAME IN LIVER DISEASE	NOT UNDER 3 ELDERLEY - CONCENTRA- TION DEPENDENT SENSIT- IVITY CPB - INCREASE VOLUME OF DISTRIBUTION - SAME CHILDREN	S-KETAMINE ANTIAPOPTOTIC	
<b>DOSE</b>	ADULT 2.5-4.5 mg/kg CHILD 5-6 mg/kg ELDERLY 30% reduction IF PREMED. IE 5 ug/ kg FENT REDUCE 40%  METHOHEX 1.5mg/kg = 4.0mg/kg THIO	DOSE ED95 ADULT 2-2.5 mg/kg < 2 YEARS 3.0mg/kg ELDER 1-2 SEDATION 25-100 ugm /kg/min ICU HYPERLIPEMIA. VT NOT PEDS	INDUCTION 0.5-2 mg/kg IV 4-6 mg/kg IM MAINTENANCE 0.5-1 mg/kg prnq 15 min 15-45ugm/kg/min(70% n2o) 30-90 ugm/kg/min SEDATION 0.2-0.8 mg/kg 2-4 mg IM ANALGESIA 0.25 mg/kg	INDUCTION 0.2-0.6 mg/kg MAINTENANCE 10ugm/kg/min with opiate SED/ANALGESIA 5-8ugm/kg/min RECTAL CHILD 6.5mg/kg 4 MINUTE ONSET
<b>CNS</b>	SUBANESTHETIC DOSE HYPERALGESIC DOSE RELATED EEG SUPPRESSION FLAT EEG AT 4mg/kg/hr DECREASE CMRO2 PARALLEL DECREASE CBF, ICP METHOHEXITOL INCREASE SEIZURE RISK DECREASE SSEP AT FLAT EEG BUT MAINTAINED IOP DECREASE FOR 2 MINUTES 40% DOES NOT DECREASE BASAL METABOLIC FUNCTION IN CNS	SIMILAR TO BARBS [] DEPENDENT DECREASE IN BIS 63 50% UNCON 51 95% UNCON DECREASE ICP 30% AND DECREASE CBF 10% NORMAL RESPONSE TO CO2 AND AUTOREGULATION WHEN INCREASE ICP DECREASE 30-50% AND DECREASE CBF BUT CMRO2 36%  OVERALL PROTECTIVE IN HYPOXIC INJURY BRAIN STEM ER NO CHANGE AUDITORY ABRUPT DECRE. RARE POSTOP SEIZURE RISK 1/50000	FUNCTIONAL DISORGANI- SATION THALAMONEOCORTICAL PROJECTION SYSTEM DECREASE FUNCTION IN ASSOCIATION AREAS OF CORTEX AND THALAMUS PROFOUND ANAGESIA BUT MANY REFLEXES INTACT CORNEAL, COUGH, SWALLOW BUT MAY NOT BE PROTECTIVE  30 SEC ONSET MAX AT 1 MIN PUPILS DILATE LACRIMATION SALIVATION NYSTAGMUS	NO ANALGESIA DECREASE CMRO2 45% NO CHANGE MAP BENEFICIAL INCREASE O2 SUPPLY DECREASE ICP 50% LASTS THRU INTUBATION AUTOREG OK HYPERVENT TO FURTHER REDUCE ICP IOP DECREASE 30-60% FOR 5 MINUTES CAN INDUCE GRAND MAL SEIZURES IN SUSCEPTIBLE HIGH INCIDENCE MYOCLON DECREASE AUD EVOKED NO EFFECT MOTOR EVOKED  MAPPING OF ELEPTOGENIC FOL 1

		<p>USUALLY OK IN EPILEPSY TOLERANCE/ADDICTION</p> <p>IOP DECREASE 30-40% EVEN BETTER WITH SECOND SMALL DOSE</p> <p>SUPPRESS NMDA DECREASE ACh INCREASE DOPAMINE INCREASE PLEASURE, ADDICTION DECREASE SEROTONIN DECREASE EMESIS</p>	<p>AWAKE LIMB MOVEMENTS AWAKE 10-15 MIN FULL ORIENTATION 15-30 INCREASE CMRO2 CBF, ICP CO2 RESPONSE MAINTAIN IF VENTILATE CAN DECREASE ICP INCREASE IOP</p>	
<b>RESP</b>	<p>APNEA DECREASE RESPONSE TO HPOXEMIA AND HYPERCAPNIA RELATIVE INCREASE IN LARYNGEAL REFLEXES TO PROPOFOL DECREASED MUCOCILIARY CHANGE SAFE IN ASTHMA NO BRONCHODILATION</p>	<p>SIMILAR TO BARBS APNEA 25-30% OFTEN &gt; 30 SEC. RATE DECREASE 2 MIN MIN VOL. 4 MIN DECREASE CO2 RESPONSE AT 100ugm/kg/min APPROX 50-60% EQUAL TO 1 MAC HALOTHANE BUT LITTLE FURTHER CHANGE EVEN IF DOUBLE INFUSION RATE BRONCHODILATION - MUSCARINIC RECEPTORS - VAGAL INHIBITION -METABISULFATE CANCELS BRONCHODILATION ATTENUATES HPV</p>	<p>MINIMAL EFFECT ON RESP. DRIVE APNEA AT HIGH DOSES CHILDREN MAY BE MORE SENSITIVE BRONCHODILATOR BY SNS AND DIRECT EFFECT INCREASE SALIVATION ? AIRWAY SAFETY</p>	<p>MINIMAL EFFECT ON VENTILATION NO HISTAMINE RELEASE LESS DECREASE OF VENTILATORY DRIVE</p>
<b>CVS</b>	<p>VENODILATION AND PERIPHERAL POOLING DECREASE PRELOAD DECREASE CONTRACTILITY GREATER THAN PROP, MID, KET, ETOM LESS THAN INHALATIONAL DECREASE NO SYNTHETASE</p>	<p>DECREASE BP 25-40% CI,SVI,SVR RIGHT AND LEFT HEART DECREASE PRELOAD AND AFTERLOAD DECREASE BARORECEPTOR</p>	<p>INCREASE HR, BP,CI,MVO2 SECOND DOSE MAY NOT RESPOND OF OPPOSITE EFFECT DUE TO CATECHOL DEPLETION IF INCREASE PVR MAY</p>	<p>LITTLE OR NO CHANGE IN VALVE DISEASE 50% DECREASE IN MYOCARDIAL BLOOD FLOW AND O2 DEMAND MINIMAL EFFECT ON QT</p>

	DECREASE INFLUX TRANSSAR-COLEMMAL CALCIUM INCREASE HR, MVO2 NO CHANGE SVR, CATECHOL SENSITIVITY	NO CHANGE AV OR CONDUCT NO CHANGE HR (INHIBITS BRONCHORECEPTOR) INFUSION LESS EFFECTS GLOBAL DEMAND BALANCE SUPPRESS ATRIAL TACHY AVOID IN EP. STUDIES	INCREASE RELATIVE TO SVR CENTRAL AND SYNPATHO-ADRENAL AXIS BLUNTED BY BENZOS INHALED, OPIATES ETC	NEED OPIATE TO BLUNT SNS FROM INTUBATION
<b>NMR</b>	NO CHANGE	NO CHANGE	INCREASED NMB	INCREASE NMB
<b>MH</b>	OK	OK	OK BUT CONFUSING	OK
<b>ALLERGY</b>	1/30000 BOTH ANAPHLACTOID AND AXIS STEVENS -JOHNSON SYNDROME	ANAPHYLACTOID DRUG AND EMULSION ATOPY CROSS SENSITIVE TO COSMETICS	RARE	RARE, PROPYLENE GLYCOL TOXICITY--HYPEROSMOLAR
<b>ENDOCRINE</b>	SLIGHT INCREASE CORTISOL, GLUCOSE  PORPHYRIA ABSOLUTE CONTRIND, IN ACUTE INTERMITTENT AND VARIEGATE ( INTERFERE WITH AMINO LEVULINIC ACID SYNTHETASE)	NONE	SEE ABOVE AVOID IN HYPERTHYROID	DOSE DEPENDENT INHIBIT OF 11beta HYDROXYLASE INCREASED CORTISOL PRECURSORS AND ACTH DECREASE MINERALCORT SUPPLEMENT WITH VIT C MAY MITIGATE EFFECT FOR SINGLE USE +/- SHORT INFUSION NO ISSUE 1) NO KNOWN NEGATIVE OUTCOME 2)USUALLY LOW NORMAL 3)IN HIGH STRESS SURG. RESPONSE OK
<b>MISC</b>	MINIMAL HISTAMINE DECREASE RENAL FLOW DECREASE NEUTOPHIL FUNCTION	AS EFFECTIVE AS NALOXONE FOR PRURITIS NO CHANGE HEPATIC OR FIBRINOLYTIC FUNCTION SUPPORTS GROWTH OF E.COLI, PSEUDOMONAS	INHIBITS CENTRAL SENSITIZATION - DECREASES ANALGESIC PERIOP EPIDURAL USE 0.5 - 1.0 MG/KG AVOID IN SCHIZOPHRENIA+ WHEN OTHER CAUSES OF DELERIUUM	VITAMIN C RESTORES CORTISOL LEVELS TO NORMAL
<b>RECOVERY</b>	11-20 % N+V	MAKES YOU BABE IN		AVOID IN PATIENTS PRONE TO

	<p>THROMBOSIS AND PHLEBITIS IF INTRARARTERIAL SEVERE SPASM. TREAT WITH IV LIDO AND STELLATE EPIDURAL... DILUTE AND BUPIVICAINE TO PRECIPITATE</p> <p>DRIVING 8 HRS ABN SLEEP 12 HRS</p>	<p>EYES OF PATIENT ANTIEMETIC PAIN ON INJECTION LIDO, FENT,METOCLOPROM INTRAART HURTS BUT NO SPASM MYOCLONUS POSTURING PROPOFOL INFUSION SYNDROME - 5 MG/KG/HR OR &gt; 48 HRS. - CARDIOMYOPATHY, ACIDOSIS LIPEMIA ETC. - CARNITINE DEFICIENCY BLOCKS UPTAKE OF FATTY ACIDS INTO MITO.</p>	<p>EMERGENCE DELERIUM LESS COMMON IN CHILDREN AND WITH REPEATED USE BLOCKED BY BENZOS MISINTERPRETATION OF AUDITORY AND VISUAL STIMULI LOSS OF PERCEPTION OF GRAVITY GREATER IN FEMALE, HIGHER DOSE, ATROPINE PERSONALITY DISORDER, DROPERIDOL</p>	<p>NAUSEA AND VOMITTING</p>
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SUMMARY	CEREBRAL EFFECTS	RESPIRATORY EFFECTS	CARDIOVASCULAR	RECOVERY
THIOPENTAL	POS	NEG	NEG	POS
METHOHEX	POS	NEG	NEG	POS
ETOMIDATE	POS	NEUT	POS	NEG
PROPOFOL	POS	NEG	NEG	VERY POS
KETAMINE	NEG	POS	NEG	SLIGHT NEG
DIAZEPAM	POS	NEUT	NEUT	POS
MIDOZOLAM	POS	NEUT	NEUT	POS