140.00 mm

210.00 mm

Tablet/Syrup

Mantin

(Memantine HCl USP)

مینٹین ٹیبلٹ/سیرپ

(میمن ٹین ہائیڈروکلورائیڈ - یو ایس پی)

COMPOSITION

Mantin tablet 10mg
Each film-coated tablet contains:
Memantine HCl (USP)..... 10mg
Mantin tablet 20mg
Each film-coated tablet contains:
Memantine HCl (USP)..... 20mg
Products comply USP specs.
Mantin syrup 10mg/5ml
Each 5ml contains:
Memantine HCl (USP)..... 10mg
Product complies Innovator's specs.

DESCRIPTION

Memantine is used to treat the symptoms of Alzheimer's disease (AD; a brain disease that slowly destroys the memory and the ability to think, learn, communicate and handle daily activities). Memantine is in a class of medications called NMDA receptor antagonists. It works by decreasing abnormal activity in the brain.

MECHANISM OF ACTION

Persistent activation of central nervous system N-methyl-D-aspartate (NMDA) receptors by the excitatory amino acid glutamate has been hypothesized to contribute to the symptomatology of Alzheimer's disease. Memantine is postulated to exert its therapeutic effect through its action as a low to moderate affinity uncompetitive (open-channel) NMDA receptor antagonist which binds preferentially to the NMDA receptor-operated cation channels. There is no evidence that memantine prevents or slows neurodegeneration in patients with Alzheimer's disease.

INDICATIONS

Memantine hydrochloride is indicated for the treatment of moderate to severe dementia of the Alzheimer's type.

DOSAGE & ADMINISTRATION

The recommended starting dose of MEMANTINE is 5 mg once daily. The dose should be increased in 5 mg increments to 10 mg/day (5 mg twice daily), 15 mg/day (5 mg and 10 mg as separate doses), and 20 mg/day (10 mg twice daily). The minimum recommended interval between dose increases is one week. The dosage shown to be effective in controlled clinical trials is 20 mg/day.
Memantine can be taken with or without food. If a patient misses a single dose of Memantine, that patient should not double up on the next dose. The next dose should be taken as scheduled. If a patient fails to take Memantine for several days, dosing may need to be resumed at lower doses and retitrated as described above. Do not mix Memantine oral solution with any other liquid

PHARMACODYNAMICS

Memantine showed low to negligible affinity for GABA, benzodiazepine, dopamine, adrenergic, histamine and glycine receptors and for voltage-dependent Ca^{2+}, Na^{+}, K^{+} channels. Memantine also showed antagonistic effects at the $5HT_3$ receptor with a potency similar to that for the NMDA receptor and blocked nicotinic acetylcholine receptors with one-sixth to one-tenth the potency. In vitro studies have shown that memantine does not affect the reversible inhibition of acetylcholinesterase by donepezil, galantamine, or tacrine.

PHARMACOKINETICS

Absorption
Following oral administration memantine is highly absorbed with peak concentrations reached in about 3-7 hours. Memantine has linear pharmacokinetics over the therapeutic dose range. Food has no effect on the absorption of memantine.
Distribution
The mean volume of distribution of memantine is 9-11 L/kg and the plasma protein binding is low (45%).
Metabolism
Memantine undergoes partial hepatic metabolism. The hepatic microsomal CYP450 enzyme system does not play a significant role in the metabolism of memantine.
Elimination
Memantine is excreted predominantly (about 48%) unchanged in urine and has a terminal elimination half- life of about 60-80 hours.
The remainder is converted primarily to three polar metabolites which possess minimal NMDA receptor antagonistic activity: the N-glucuronide conjugate, 6-hydroxy memantine, and 1-nitrosodeaminated memantine. A total of 74% of the administered dose is excreted as the sum of the parent drug and the N-glucuronide conjugate. Renal clearance involves active tubular secretion moderated by pH dependent tubular reabsorption.

WARNINGS&PRECAUTIONS

Conditions that raise urine pH may decrease the urinary elimination of memantine resulting in increased plasma levels of memantine.
Concomitant use of N-methyl-D-aspartate (NMDA)-antagonists such as amantadine, ketamine or dextromethorphan should be avoided. These compounds act at the same receptor system as memantine, and therefore adverse reactions (mainly central nervous system (CNS)-related) may be more frequent or more pronounced.
Some factors that may raise urine pH may necessitate careful monitoring of the patient. These factors include drastic changes in diet, e.g. from a carnivore to a vegetarian diet, or a massive ingestion of alkalising gastric buffers. Also, urine pH may be elevated by states of renal tubulary acidosis (RTA) or severe infections of the urinary tract with Proteus bacteria.
Pregnancy
Pregnancy Category B
There are no adequate and well-controlled studies of memantine in pregnant women. Memantine should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.
Nursing Mothers
It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when memantine is administered to a nursing mother

DRUG INTERACTIONS

Drugs that Make the Urine Alkaline
The clearance of memantine was reduced by about 80% under alkaline urine conditions at pH 8. Therefore, alterations of urine pH towards the alkaline condition may lead to an accumulation of the drug with a possible increase in adverse effects. Urine pH is altered by diet, drugs (e.g. carbonic anhydrase inhibitors, sodium bicarbonate) and clinical state of the patient (e.g. renal tubular acidosis or severe infections of the urinary tract). Hence, memantine should be used with caution under these conditions.
Use with Other N-methyl-D-aspartate (NMDA) Antagonists
The combined use of memantine with other NMDA antagonists (amantadine, ketamine, and dextromethorphan) has not been systematically evaluated and such use should be approached with caution.

SIDE EFFECTS

Blood and Lymphatic System Disorders: agranulocytosis, leukopenia (including neutropenia), pancytopenia, thrombocytopenia, thrombotic thrombocytopenic purpura.
Cardiac Disorders: cardiac failure congestive.
Gastrointestinal Disorders: pancreatitis.
Hepatobiliary Disorders: hepatitis.
Psychiatric Disorders: suicidal ideation.
Renal and Urinary Disorders: acute renal failure (including increased creatinine and renal insufficiency).
Skin Disorders: Stevens Johnson syndrome.

CONTRAINDICATIONS

Memantine hydrochloride is contraindicated in patients with known hypersensitivity to memantine hydrochloride or to any excipients used in the formulation.

OVERDOSE

Signs and symptoms most often accompanying memantine overdosage in clinical trials and from worldwide marketing experience, alone or in combination with other drugs and/or alcohol, include agitation, asthenia, bradycardia, confusion, coma, dizziness, ECG changes, increased blood pressure, lethargy, loss of consciousness, psychosis, restlessness, slowed movement, somnolence, stupor, unsteady gait, visual hallucinations, vertigo, vomiting, and weakness. The largest known ingestion of memantine worldwide was 2.0 grams in a patient who took memantine in conjunction with unspecified antidiabetic medications. The patient experienced coma, diplopia, and agitation, but subsequently recovered. Fatal outcome has been very rarely reported with memantine, and the relationship to memantine was unclear.
Because strategies for the management of overdose are continually evolving, it is advisable to contact a poison control center to determine the latest recommendations for the management of an overdose of any drug. As in any cases of overdose, general supportive measures should be utilized, and treatment should be symptomatic. Elimination of memantine can be enhanced by acidification of urine.

STORAGE & INSTRUCTIONS

Store between 15-25°C.
Protect from heat, sunlight and moisture.
Keep away from the reach of the children.
To be sold on the prescription of a registered medical practitioner only.

HOW SUPPLIED

Mantin tablet 10mg
10's, 20's, 56's Tablets
Mantin tablet 20mg
10's Tablets
Mantin syrup 10mg/5ml
120ml

خوراک وطریقہ استعمال:

ڈاکٹر کی ہدایات کے مطابق استعمال کریں۔

ہدایات:

دوا کو ۱۵-۲۵ ڈگری سینٹی گریڈ درجہ حرارت کے درمیان ٹھنڈی اور خشک جگہ پر رکھیں۔
دھوپ، گرمی اور نمی سے بچائیں۔
بچوں کی پہنچ سے دور رکھیں۔
صرف رجسٹرڈ ڈاکٹر کے نسخے پر فروخت کریں۔

Manufactured by:
PHARMASOL
PRIVATE LIMITED
Plot # 549,Sundar Industrial Estate,
Lahore, Pakistan.