

**ZOLPIDEM TARTRATE- zolpidem tartrate tablet, film coated**  
**Synthon Pharmaceuticals, Inc.**

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**HIGHLIGHTS OF PRESCRIBING INFORMATION**

----- **RECENT MAJOR CHANGES** -----

Indications and Usage (1) 03/2007  
Warnings and Precautions (5) 03/2007

----- **INDICATIONS AND USAGE** -----

Zolpidem tartrate tablets are indicated for the short-term treatment of insomnia characterized by difficulties with sleep initiation. Zolpidem tartrate tablets have been shown to decrease sleep latency for up to 35 days in controlled clinical studies. (1)

----- **DOSAGE AND ADMINISTRATION** -----

- Adult dose: 10 mg immediately before bedtime (2.1)
- Elderly/Debilited patients/Hepatic Impairment: Initial dose of 5 mg (2.2)
- Downward dosage adjustment may be necessary when used with CNS depressants (2.3)
- Total daily dose should not exceed 10 mg (2.4)

----- **DOSAGE FORMS AND STRENGTHS** -----

5 mg and 10 mg tablets (3)

----- **CONTRAINDICATIONS** -----

Hypersensitivity to zolpidem tartrate or inactive ingredients (4.1)

----- **WARNINGS AND PRECAUTIONS** -----

- Reevaluate if insomnia persists after 7 to 10 days of use (5.1)
- Severe anaphylactic and anaphylactoid reactions have been reported (5.2)
- Abnormal thinking, behavior changes and complex behaviors such as sleep-driving have been reported (5.3)
- Pediatric patients with attention-deficit/hyperactivity disorder (ADHD): Hallucinations (7.4%) and other psychiatric and /or nervous system adverse events were observed frequently (5.6, 8.4)
- Depression: Worsening of depression or, suicidal thinking may occur. Prescribe the least amount feasible to avoid intentional overdose (5.3, 5.6)
- Withdrawal symptoms may occur with rapid dose reduction or discontinuation (5.4)
- CNS depressant effects, additive effects with CNS depressants (2.3, 5.5)
- Potential impairment of activities requiring complete mental alertness such as operating machinery or driving a motor vehicle, after ingesting the drug and the following day (5.5)
- Additive effects with alcohol; should not be taken with alcohol (5.5)
- Elderly/debilited patients: Impaired motor, cognitive performance after repeated exposure, increased sensitivity (2.2, 5.6)
- Caution advised in patients with hepatic impairment, mild to moderate COPD, impaired drug metabolism or hemodynamic responses, mild to moderate sleep apnea (5.6)

----- **ADVERSE REACTIONS** -----

- Most commonly observed adverse events in studies with zolpidem (up to 10 mg) at statistically significant differences from placebo were:  
Short-term (<10 nights): Drowsiness, dizziness, and diarrhea  
Long-term (28 - 35 nights): Dizziness and drugged feelings (6.1)
- Dose relationship observed for adverse events especially CNS and GI events (6.1)
- Other adverse reactions, including serious adverse reactions, have been reported (6)

----- **DRUG INTERACTIONS** -----

- Imipramine: decreased alertness (7.1)
- Chlorpromazine: impaired alertness and psychomotor performance (7.1)
- Alcohol causes additive psychomotor impairment (7.1)
- Rifampin (CYP450) decreases exposure to, and effects of zolpidem (7.2)
- Sedative/hypnotic effect reversed by flumazenil (7.3, 10.2)

----- **USE IN SPECIFIC POPULATIONS** -----

- Labor and delivery: No established use (8.2)
- Nursing mothers: Not recommended (8.3)

- Pediatric use: Safety and effectiveness have not been established (8.4)
- Geriatric use: Reduced dose in elderly to decrease side effects (8.5)

See 17 for PATIENT COUNSELING INFORMATION.

Revised: 5/2007

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## **FULL PRESCRIBING INFORMATION**

### **1 INDICATIONS AND USAGE**

Zolpidem tartrate tablets are indicated for the short-term treatment of insomnia characterized by difficulties with sleep initiation. Zolpidem tartrate tablets have been shown to decrease sleep latency for up to 35 days in controlled clinical studies [see *Clinical Studies (14)*].

The clinical trials performed in support of efficacy were 4-5 weeks in duration with the final formal assessments of sleep latency performed at the end of treatment.

### **2 DOSAGE AND ADMINISTRATION**

#### **2.1 Dosage in adults**

The dose of zolpidem tartrate tablets should be individualized.

The recommended dose for adults is 10 mg immediately before bedtime.

#### **2.2 Special Populations**

Elderly or debilitated patients may be especially sensitive to the effects of zolpidem tartrate tablets. Patients with hepatic insufficiency do not clear the drug as rapidly as normals. An initial 5 mg dose is recommended in these patients [see *Warnings and Precautions (5)*].

#### **2.3 Administration with CNS depressants**

Downward dosage adjustment may be necessary when zolpidem tartrate tablets are administered with agents having known CNS-depressant effects because of the potentially additive effects [see *Warnings and Precautions (5)*].

#### **2.4 Maximum daily dose**

The total zolpidem tartrate tablet dose should not exceed 10 mg per day.

### **3 DOSAGE FORMS AND STRENGTHS**

Zolpidem tartrate tablets are available in 5 mg and 10 mg strength tablets for oral administration.

Zolpidem tartrate tablets 5 mg are pink, round, film-coated, debossed with "ZIM" on one side and "5" on the other side. The 10 mg tablets are white, round, film-coated, debossed with "ZIM" on one side and "10" on the other side. Tablets are not scored.

## 4 CONTRAINDICATIONS

### 4.1 Hypersensitivity

Zolpidem tartrate tablets are contraindicated in patients with known hypersensitivity to zolpidem tartrate or to any of the inactive ingredients in the formulation.

## 5 WARNINGS AND PRECAUTIONS

### 5.1 General

Because sleep disturbances may be the presenting manifestation of a physical and/or psychiatric disorder, symptomatic treatment of insomnia should be initiated only after a careful evaluation of the patient. The failure of insomnia to remit after 7 to 10 days of treatment may indicate the presence of a primary psychiatric and/or medical illness that should be evaluated. Worsening of insomnia or the emergence of new thinking or behavior abnormalities may be the consequence of an unrecognized psychiatric or physical disorder. Such findings have emerged during the course of treatment with sedative/hypnotic drugs, including zolpidem tartrate tablets. Because some of the important adverse effects of zolpidem tartrate tablets appear to be dose related [*see Dosage and Administration (2)*], it is important to use the smallest possible effective dose, especially in the elderly.

### 5.2 Severe anaphylactic and anaphylactoid reactions

Rare cases of angioedema involving the tongue, glottis or larynx have been reported in patients after taking the first or subsequent doses of sedative-hypnotics, including zolpidem tartrate tablets. Some patients have had additional symptoms such as dyspnea, throat closing or nausea and vomiting that suggest anaphylaxis. Some patients have required medical therapy in the emergency department. If angioedema involves the throat, glottis or larynx, airway obstruction may occur and be fatal. Patients who develop angioedema after treatment with zolpidem tartrate tablets should not be rechallenged with the drug.

### 5.3 Abnormal Thinking and Behavioral Changes

A variety of abnormal thinking and behavior changes have been reported to occur in association with the use of sedative/hypnotics. Some of these changes may be characterized by decreased inhibition (eg, aggressiveness and extroversion that seemed out of character), similar to effects produced by alcohol and other CNS depressants. Visual and auditory hallucinations have been reported as well as behavioral changes such as bizarre behavior, agitation and depersonalization. In controlled trials, <1% of adults with insomnia who received zolpidem reported hallucinations. In a clinical trial, 7.4 % of pediatric patients with insomnia associated with attention-deficit/hyperactivity disorder (ADHD), who received zolpidem reported hallucinations.

Complex behaviors such as "sleep-driving" (i.e., driving while not fully awake after ingestion of a sedative-hypnotic, with amnesia for the event) have been reported. These events can occur in sedative-hypnotic-naïve as well as in sedative-hypnotic-experienced persons. Although behaviors such as "sleep-driving" may occur with zolpidem tartrate tablets alone at therapeutic doses, the use of alcohol and other CNS depressants with zolpidem tartrate tablets appears to increase the risk of such behaviors, as does the use of zolpidem tartrate tablets at doses exceeding the maximum recommended dose. Due to the risk to the patient and the community, discontinuation of zolpidem tartrate tablets should be strongly considered for patients who report a "sleep-driving" episode. Other complex behaviors (e.g., preparing and eating food, making phone calls, or having sex) have been reported in patients who are not fully awake after taking a sedative-hypnotic. As with "sleep-driving", patients usually do not remember these events. Amnesia, anxiety and other neuro-psychiatric symptoms may occur unpredictably. In primarily depressed patients, worsening of depression, including suicidal thinking, has been reported in association with the use of sedative/hypnotics.

It can rarely be determined with certainty whether a particular instance of the abnormal behaviors listed above is drug induced, spontaneous in origin, or a result of an underlying psychiatric or physical disorder. Nonetheless, the emergence of any new behavioral sign or symptom of concern requires careful and immediate evaluation.

#### 5.4 Withdrawal effects

Following the rapid dose decrease or abrupt discontinuation of sedative/hypnotics, there have been reports of signs and symptoms similar to those associated with withdrawal from other CNS-depressant drugs [see *Drug Abuse and Dependence (9)*].

#### 5.5 CNS depressant effects

Zolpidem tartrate tablets, like other sedative/hypnotic drugs, have CNS-depressant effects. Due to the rapid onset of action, zolpidem tartrate tablets should only be ingested immediately prior to going to bed. Patients should be cautioned against engaging in hazardous occupations requiring complete mental alertness or motor coordination such as operating machinery or driving a motor vehicle after ingesting the drug, including potential impairment of the performance of such activities that may occur the day following ingestion of zolpidem tartrate tablets. Zolpidem tartrate tablets showed additive effects when combined with alcohol and should not be taken with alcohol. Patients should also be cautioned about possible combined effects with other CNS-depressant drugs. Dosage adjustments may be necessary when zolpidem tartrate tablets are administered with such agents because of the potentially additive effects.

#### 5.6 Special Populations

**Use in the elderly and/or debilitated patients:** Impaired motor and/or cognitive performance after repeated exposure or unusual sensitivity to sedative/hypnotic drugs is a concern in the treatment of elderly and/or debilitated patients. Therefore, the recommended zolpidem tartrate tablets dosage is 5 mg in such patients [see *Dosage and Administration (2)*] to decrease the possibility of side effects. These patients should be closely monitored.

**Use in patients with concomitant illness:** Clinical experience with zolpidem tartrate tablets in patients with concomitant systemic illness is limited. Caution is advisable in using zolpidem tartrate tablets in patients with diseases or conditions that could affect metabolism or hemodynamic responses. Although studies did not reveal respiratory depressant effects at hypnotic doses of zolpidem tartrate tablets in normals or in patients with mild to moderate chronic obstructive pulmonary disease (COPD), a reduction in the Total Arousal Index together with a reduction in lowest oxygen saturation and increase in the times of oxygen desaturation below 80% and 90% was observed in patients with mild-to-moderate sleep apnea when treated with zolpidem tartrate tablets (10 mg) when compared to placebo. However, precautions should be observed if zolpidem tartrate tablets are prescribed to patients with compromised respiratory function, since sedative/hypnotics have the capacity to depress respiratory drive. Post-marketing reports of respiratory insufficiency, most of which involved patients with pre-existing respiratory impairment, have been received. Data in end-stage renal failure patients repeatedly treated with zolpidem tartrate tablets did not demonstrate drug accumulation or alterations in pharmacokinetic parameters. No dosage adjustment in renally impaired patients is required; however, these patients should be closely monitored [see *Pharmacokinetics (12.3)*]. A study in subjects with hepatic impairment did reveal prolonged elimination in this group; therefore, treatment should be initiated with 5 mg in patients with hepatic compromise, and they should be closely monitored.

**Use in depression:** As with other sedative/hypnotic drugs, zolpidem tartrate tablets should be administered with caution to patients exhibiting signs or symptoms of depression. Suicidal tendencies may be present in such patients and protective measures may be required. Intentional over-dosage is more common in this group of patients; therefore, the least amount of drug that is feasible should be prescribed for the patient at any one time.

**Pediatric patients:** Safety and effectiveness of zolpidem has not been established in pediatric patients. In an 8-week study in pediatric patients (aged 6-17 years) with insomnia associated with ADHD, zolpidem did not decrease sleep latency compared to placebo. Hallucinations were reported in 7.4% of the pediatric patients who received zolpidem; none of the pediatric patients who received placebo reported hallucinations [see *Use in Specific Populations: Pediatric Use (8.4)*].

## 5.7 Laboratory tests

**Monitoring:** There are no specific laboratory tests recommended to monitor zolpidem levels.

**Interference with laboratory tests:** Zolpidem is not known to interfere with commonly employed clinical laboratory tests. In addition, clinical data indicate that zolpidem does not cross-react with benzodiazepines, opiates, barbiturates, cocaine, cannabinoids, or amphetamines in two standard urine drug screens.

## 6 ADVERSE REACTIONS

Serious adverse reactions including severe anaphylactic and anaphylactoid reactions, abnormal thinking and behavior, complex behaviors, withdrawal effects, amnesia, anxiety, other neuro-psychiatric symptoms and CNS-depressant effects have been reported with zolpidem [see *Warnings and Precautions (5)*].

### 6.1 Incidence in controlled clinical trials

**Associated with discontinuation of treatment:** Approximately 4% of 1,701 patients who received zolpidem at all doses (1.25 to 90 mg) in U.S. premarketing clinical trials discontinued treatment because of an adverse clinical event. Events most commonly associated with discontinuation from U.S. trials were daytime drowsiness (0.5%), dizziness (0.4%), headache (0.5%), nausea (0.6%), and vomiting (0.5%).

Approximately 4% of 1,959 patients who received zolpidem at all doses (1 to 50 mg) in similar foreign trials discontinued treatment because of an adverse event. Events most commonly associated with discontinuation from these trials were daytime drowsiness (1.1%), dizziness/vertigo (0.8%), amnesia (0.5%), nausea (0.5%), headache (0.4%), and falls (0.4%).

Data from a clinical study in which selective serotonin reuptake inhibitor- (SSRI) treated patients were given zolpidem revealed that four of the seven discontinuations during double-blind treatment with zolpidem (n=95) were associated with impaired concentration, continuing or aggravated depression, and manic reaction; one patient treated with placebo (n=97) was discontinued after an attempted suicide.

**Most commonly observed adverse events in controlled trials:** During short-term treatment (up to 10 nights) with zolpidem tartrate tablets at doses up to 10 mg, the most commonly observed adverse events associated with the use of zolpidem and seen at statistically significant differences from placebo-treated patients were drowsiness (reported by 2% of zolpidem patients), dizziness (1%), and diarrhea (1%). During longer-term treatment (28 to 35 nights) with zolpidem at doses up to 10 mg, the most commonly observed adverse events associated with the use of zolpidem and seen at statistically significant differences from placebo-treated patients were dizziness (5%) and drugged feelings (3%).

**Adverse events observed at an incidence of  $\geq 1\%$  in controlled trials:** The following tables enumerate treatment-emergent adverse event frequencies that were observed at an incidence equal to 1% or greater among patients with insomnia who received zolpidem tartrate tablets in U.S. placebo-controlled trials. Events reported by investigators were classified utilizing a modified World Health Organization (WHO) dictionary of preferred terms for the purpose of establishing event frequencies. The prescriber should be aware that these figures cannot be used to predict the incidence of side effects in the course of usual medical practice, in which patient characteristics and other factors differ

from those that prevailed in these clinical trials. Similarly, the cited frequencies cannot be compared with figures obtained from other clinical investigators involving related drug products and uses, since each group of drug trials is conducted under a different set of conditions. However, the cited figures provide the physician with a basis for estimating the relative contribution of drug and nondrug factors to the incidence of side effects in the population studied.

The following table was derived from a pool of 11 placebo-controlled short-term U.S. efficacy trials involving zolpidem in doses ranging from 1.25 to 20 mg. The table is limited to data from doses up to and including 10 mg, the highest dose recommended for use.

**Incidence of Treatment-Emergent Adverse Experiences in Short-term Placebo-Controlled Clinical Trials (Percentage of patients reporting)**

<b>Body System/Adverse Event*</b>	<b>Zolpidem (≤10mg) (N=685)</b>	<b>Placebo (N=473)</b>
Central and Peripheral Nervous System		
Headache	7	6
Drowsiness	2	–
Dizziness	1	–
Gastrointestinal System		
Nausea	2	3
Diarrhea	1	-
Musculoskeletal System		
Myalgia	1	2

\* Events reported by at least 1% of zolpidem tartrate tablets patients are included

The following table was derived from a pool of three placebo-controlled long-term efficacy trials involving zolpidem tartrate tablets. These trials involved patients with chronic insomnia who were treated for 28 to 35 nights with zolpidem at doses of 5, 10, or 15 mg. The table is limited to data from doses up to and including 10 mg, the highest dose recommended for use. The table includes only adverse events occurring at an incidence of at least 1% for zolpidem patients.

**Incidence of Treatment-Emergent Adverse Experiences in Long-term Placebo-Controlled Clinical Trials (Percentage of patients reporting)**

<b>Body System/Adverse Event*</b>	<b>Zolpidem (≤10mg) (N=152)</b>	<b>Placebo (N=161)</b>
Autonomic Nervous System		
Dry mouth	3	1
Body as a Whole		
Allergy	4	1
Back Pain	3	2
Influenza-like symptoms	2	-
Chest pain	1	-
Fatigue	1	2
Cardiovascular System		
Palpitation	2	-
Central and Peripheral Nervous		

System		
Headache	19	22
Drowsiness	8	5
Dizziness	5	1
Lethargy	3	1
Drugged feeling	3	-
Lightheadedness	2	1
Depression	2	1
Abnormal dreams	1	-
Amnesia	1	-
Anxiety	1	1
Nervousness	1	3
Sleep disorder	1	-
Gastrointestinal System		
Nausea	6	6
Dyspepsia	5	6
Diarrhea	3	2
Abdominal pain	2	2
Constipation	2	1
Anorexia	1	1
Vomiting	1	1
Immunologic System		
Infection	1	1
Musculoskeletal System		
Myalgia	7	7
Arthralgia	4	4
Respiratory System		
Upper respiratory infection	5	6
Sinusitis	4	2
Pharyngitis	3	1
Rhinitis	1	3
Skin and Appendages		
Rash	2	1
Urogenital System		
Urinary tract infection	2	2

\* Events reported by at least 1% of patients treated with zolpidem tartrate tablets.

**Dose relationship for adverse events:** There is evidence from dose comparison trials suggesting a dose relationship for many of the adverse events associated with zolpidem use, particularly for certain CNS and gastrointestinal adverse events.

**Adverse event incidence across the entire preapproval database:** zolpidem tartrate tablets were administered to 3,660 subjects in clinical trials throughout the U.S., Canada, and Europe. Treatment-emergent adverse events associated with clinical trial participation were recorded by clinical investigators using terminology of their own choosing. To provide a meaningful estimate of the proportion of individuals experiencing treatment-emergent adverse events, similar types of untoward events were grouped into a smaller number of standardized event categories and classified utilizing a modified World Health Organization (WHO) dictionary of preferred terms. The frequencies presented, therefore, represent the proportions of the 3,660 individuals exposed to zolpidem, at all doses, who



experienced an event of the type cited on at least one occasion while receiving zolpidem. All reported treatment-emergent adverse events are included, except those already listed in the table above of adverse events in placebo-controlled studies, those coding terms that are so general as to be uninformative, and those events where a drug cause was remote. It is important to emphasize that, although the events reported did occur during treatment with zolpidem tartrate tablets, they were not necessarily caused by it.

Adverse events are further classified within body system categories and enumerated in order of decreasing frequency using the following definitions: frequent adverse events are defined as those occurring in greater than 1/100 subjects; infrequent adverse events are those occurring in 1/100 to 1/1,000 patients; rare events are those occurring in less than 1/1,000 patients.

*Autonomic nervous system:* Infrequent: increased sweating, pallor, postural hypotension, syncope. Rare: abnormal accommodation, altered saliva, flushing, glaucoma, hypotension, impotence, increased saliva, tenesmus.

*Body as a whole:* Frequent: asthenia. Infrequent: edema, falling, fever, malaise, trauma. Rare: allergic reaction, allergy aggravated, anaphylactic shock, face edema, hot flashes, increased ESR, pain, restless legs, rigors, tolerance increased, weight decrease.

*Cardiovascular system:* Infrequent: cerebrovascular disorder, hypertension, tachycardia. Rare: angina pectoris, arrhythmia, arteritis, circulatory failure, extrasystoles, hypertension aggravated, myocardial infarction, phlebitis, pulmonary embolism, pulmonary edema, varicose veins, ventricular tachycardia.

*Central and peripheral nervous system:* Frequent: ataxia, confusion, euphoria, insomnia, vertigo. Infrequent: agitation, decreased cognition, detached, difficulty concentrating, dysarthria, emotional lability, hallucination, hypoesthesia, illusion, leg cramps, migraine, paresthesia, sleeping (after daytime dosing), speech disorder, stupor, tremor. Rare: abnormal gait, abnormal thinking, aggressive reaction, apathy, appetite increased, decreased libido, delusion, dementia, depersonalization, dysphasia, feeling strange, hypokinesia, hypotonia, hysteria, intoxicated feeling, manic reaction, neuralgia, neuritis, neuropathy, neurosis, panic attacks, paresis, personality disorder, somnambulism, suicide attempts, tetany, yawning.

*Gastrointestinal system:* Frequent: hiccup. Infrequent: constipation, dysphagia, flatulence, gastroenteritis. Rare: enteritis, eructation, esophagospasm, gastritis, hemorrhoids, intestinal obstruction, rectal hemorrhage, tooth caries.

*Hematologic and lymphatic system:* Rare: anemia, hyperhemoglobinemia, leukopenia, lymphadenopathy, macrocytic anemia, purpura, thrombosis.

*Immunologic system:* Rare: abscess herpes simplex herpes zoster, otitis externa, otitis media.

*Liver and biliary system:* Infrequent: abnormal hepatic function, increased SGPT. Rare: bilirubinemia, increased SGOT.

*Metabolic and nutritional:* Infrequent: hyperglycemia, thirst. Rare: gout, hypercholesteremia, hyperlipidemia, increased alkaline phosphatase, increased BUN, periorbital edema.

*Musculoskeletal system:* Infrequent: arthritis. Rare: arthrosis, muscle weakness, sciatica, tendinitis.

*Reproductive system:* Infrequent: menstrual disorder, vaginitis. Rare: breast fibroadenosis, breast neoplasm, breast pain.

*Respiratory system:* Infrequent: bronchitis, coughing, dyspnea. Rare: bronchospasm, epistaxis, hypoxia, laryngitis, pneumonia.

*Skin and appendages:* Infrequent: pruritus. Rare: acne, bullous eruption, dermatitis, furunculosis, injection-site inflammation, photosensitivity reaction, urticaria.

*Special senses:* Frequent: diplopia, vision abnormal. Infrequent: eye irritation, eye pain, scleritis, taste perversion, tinnitus. Rare: conjunctivitis, corneal ulceration, lacrimation abnormal, parosmia, photopsia.

*Urogenital system:* Infrequent: cystitis, urinary incontinence. Rare: acute renal failure, dysuria, micturition frequency, nocturia, polyuria, pyelonephritis, renal pain, urinary retention.

## **7 DRUG INTERACTIONS**

### **7.1 CNS-active drugs**

Zolpidem tartrate tablets were evaluated in healthy volunteers in single-dose interaction studies for several CNS drugs. A study involving haloperidol and zolpidem revealed no effect of haloperidol on the pharmacokinetics or pharmacodynamics of zolpidem. Imipramine in combination with zolpidem produced no pharmacokinetic interaction other than a 20% decrease in peak levels of imipramine, but there was an additive effect of decreased alertness. Similarly, chlorpromazine in combination with zolpidem produced no pharmacokinetic interaction, but there was an additive effect of decreased alertness and psychomotor performance. The lack of a drug interaction following single-dose administration does not predict a lack following chronic administration.

An additive effect on psychomotor performance between alcohol and zolpidem was demonstrated [*see Warnings and Precautions: CNS depressant effects (5.5)*].

A single-dose interaction study with zolpidem 10 mg and fluoxetine 20 mg at steady-state levels in male volunteers did not demonstrate any clinically significant pharmacokinetic or pharmacodynamic interactions. When multiple doses of zolpidem and fluoxetine at steady-state concentrations were evaluated in healthy females, the only significant change was a 17% increase in the zolpidem half-life. There was no evidence of an additive effect in psychomotor performance.

Following five consecutive nightly doses of zolpidem 10 mg in the presence of sertraline 50 mg (17 consecutive daily doses, at 7:00 am, in healthy female volunteers), zolpidem  $C_{max}$  was significantly higher (43%) and  $T_{max}$  was significantly decreased (53%). Pharmacokinetics of sertraline and N-desmethylsertraline were unaffected by zolpidem.

Since the systematic evaluations of zolpidem tartrate tablets in combination with other CNS-active drugs have been limited, careful consideration should be given to the pharmacology of any CNS-active drug to be used with zolpidem. Any drug with CNS-depressant effects could potentially enhance the CNS-depressant effects of zolpidem.

### **7.2 Drugs that affect drug metabolism via cytochrome P450**

A randomized, double-blind, crossover interaction study in ten healthy volunteers between itraconazole (200 mg once daily for 4 days) and a single dose of zolpidem (10 mg) given 5 hours after the last dose of itraconazole resulted in a 34% increase in  $AUC_{0-\infty}$  of zolpidem. There were no significant pharmacodynamic effects of zolpidem on subjective drowsiness, postural sway, or psychomotor performance.

A randomized, placebo-controlled, crossover interaction study in eight healthy female volunteers between 5 consecutive daily doses of rifampin (600 mg) and a single dose of zolpidem (20 mg) given 17 hours after the last dose of rifampin showed significant reductions of the AUC (-73%),  $C_{max}$  (-58%), and  $T_{1/2}$  (-36%) of zolpidem together with significant reductions in the pharmacodynamic effects of zolpidem.

### **7.3 Other drugs**

A study involving cimetidine/zolpidem and ranitidine/zolpidem combinations revealed no effect of either drug on the pharmacokinetics or pharmacodynamics of zolpidem. Zolpidem had no effect on digoxin kinetics and did not affect prothrombin time when given with warfarin in normal subjects. Zolpidem's sedative/hypnotic effect was reversed by flumazenil; however, no significant alterations in zolpidem pharmacokinetics were found.

## 8 USE IN SPECIFIC POPULATIONS

### 8.1 Pregnancy

#### **Teratogenic effects:** Pregnancy Category C

Zolpidem tartrate was administered to pregnant Sprague-Dawley rats by oral gavage during the period of organogenesis at doses of 4, 20, or 100 mg based/kg/day. Adverse maternal and embryo/fetal effects occurred at doses of 20 mg base/kg and higher, manifesting as dose-related lethargy and ataxia in pregnant rats while examination of fetal skull bones revealed a dose-related trend toward incomplete ossification. Teratogenicity was not observed at any dose level. The no-effect dose of zolpidem for maternal and embryofetal toxicity was 4 mg base/kg/day (between 4 to 5 times the MRHD of zolpidem tartrate tablets on a mg/m<sup>2</sup> basis).

Administration of zolpidem tartrate to pregnant Himalayan Albino rabbits at doses of 1, 4, or 16 mg base/kg/day by oral gavage (over 35 times the MRHD of zolpidem tartrate tablets on a mg/m<sup>2</sup> basis) during the period of organogenesis produced dose-related maternal sedation and decreased maternal body weight gain at all doses. At the high dose of 16 mg base/kg, there was an increase in postimplantation fetal loss and under-ossification of sternebrae in viable fetuses. Teratogenicity was not observed at any dose level. The no-effect dose of zolpidem for maternal toxicity was below 1 mg base/kg/day (< 2-times the MRHD of zolpidem tartrate tablets on a mg/m<sup>2</sup> basis). The no-effect dose for embryofetal toxicity was 4 mg base/kg/day (between 9 and 10 times the MRHD of zolpidem tartrate tablets on a mg/m<sup>2</sup> basis).

Administration of zolpidem tartrate at doses of 4, 20, or 100 mg base/kg/day to pregnant Sprague-Dawley rats starting on Day 15 of gestation and continuing through Day 21 of the postnatal lactation period produced dose-dependent lethargy and ataxia in dams at doses of 20 mg base/kg and higher. Decreased maternal body weight gain as well as evidence on non-secreting mammary glands and a single incidence of maternal death was observed at 100 mg base/kg. Effects observed on rat pups included decreased body weight with maternal doses of 20 mg base/kg and higher and decreased pup survival at maternal doses of 100 mg base/kg. The no-effect dose for maternal and offspring toxicity was 4 mg base/kg (between 4 to 5 times the MRHD of zolpidem tartrate tablets on a mg/m<sup>2</sup> basis).

There are no adequate and well-controlled studies in pregnant women. Zolpidem tartrate tablets should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus

Nonteratogenic effects. Studies to assess the effects on children whose mothers took zolpidem during pregnancy have not been conducted. However, children born of mothers taking sedative/hypnotic drugs may be at some risk for withdrawal symptoms from the drug during the postnatal period. In addition, neonatal flaccidity has been reported in infants born of mothers who received sedative/hypnotic drugs during pregnancy.

### 8.2 Labor and delivery

Zolpidem tartrate tablets have no established use in labor and delivery.

### 8.3 Nursing mothers

Studies in lactating mothers indicate that the half-life of zolpidem is similar to that in young normal volunteers (2.6± 0.3 hr). Between 0.004 and 0.019% of the total administered dose is excreted into milk, but the effect of zolpidem on the infant is unknown.

In addition, in a rat study, zolpidem inhibited the secretion of milk. The no-effect dose was 4 mg base/kg or 6 times the recommended human dose in mg/m<sup>2</sup>.

The use of zolpidem tartrate tablets in nursing mothers is not recommended.

### 8.4 Pediatric use

Safety and effectiveness of zolpidem have not been established in pediatric patients.

In an 8-week controlled study, 201 pediatric patients (aged 6-17 years) with insomnia associated with attention-deficit/hyperactivity disorder (90% of the patients were using psychoanaleptics), were treated with an oral solution of zolpidem, 0.25 mg/kg/day, up to a maximum of 10 mg/day (n=136), or placebo (n = 65). Zolpidem did not significantly decrease latency to persistent sleep, compared to placebo, as measured by polysomnography after 4 weeks of treatment. Psychiatric and nervous system disorders comprised the most frequent (> 5%) treatment emergent adverse events observed with zolpidem versus placebo and included dizziness (23.5% vs. 1.5%), headache (12.5% vs. 9.2%), and hallucinations (7.4% vs. 0%) [see *Warnings and Precautions: Special Populations (5.6)*]. Ten patients on zolpidem (7.4%) discontinued treatment due to an adverse event.

### 8.5 Geriatric use

A total of 154 patients in U.S. controlled clinical trials and 897 patients in non-U.S. clinical trials who received zolpidem were ≥60 years of age. For a pool of U.S. patients receiving zolpidem at doses of ≤10 mg or placebo, there were three adverse events occurring at an incidence of at least 3% for zolpidem and for which the zolpidem incidence was at least twice the placebo incidence (ie, they could be considered drug related).

Adverse Event	Zolpidem	Placebo
Dizziness	3%	0%
Drowsiness	5%	2%
Diarrhea	3%	1%

A total of 30/1,959 (1.5%) non-U.S. patients receiving zolpidem reported falls, including 28/30 (93%) who were ≥70 years of age. Of these 28 patients, 23 (82%) were receiving zolpidem doses >10 mg. A total of 24/1,959 (1.2%) non-U.S. patients receiving zolpidem reported confusion, including 18/24 (75%) who were ≥70 years of age. Of these 18 patients, 14 (78%) were receiving zolpidem doses >10 mg.

The recommended dose of zolpidem tartrate tablets is 5 mg in elderly to decrease the possibility of side effects [see *Dosage and Administration (2)* and *Warnings and Precautions (5)*].

## 9 DRUG ABUSE AND DEPENDENCE

### 9.1 Controlled substance

Zolpidem tartrate is classified as a Schedule IV controlled substance by federal regulation.

### 9.2 Abuse

Abuse and addiction are separate and distinct from physical dependence and tolerance. Abuse is characterized by misuse of the drug for non-medical purposes, often in combination with other psychoactive substances. Physical dependence is a state of adaptation that is manifested by a specific withdrawal syndrome that can be produced by abrupt cessation, rapid dose reduction, decreasing blood level of the drug, and/or administration of an antagonist. Tolerance is a state of adaptation in which exposure to a drug induces changes that result in a diminution of one or more of the drug effects over time. Tolerance may occur to both desired and undesired effects of drugs and may develop at different rates for different effects.

Addiction is a primary, chronic, neurobiological disease with genetic, psychosocial, and environmental factors influencing its development and manifestations. It is characterized by behaviors that include one or more of the following: impaired control over drug use, compulsive use, continued use despite harm, and craving. Drug addiction is a treatable disease, using a multidisciplinary approach, but relapse is

common.

Studies of abuse potential in former drug abusers found that the effects of single doses of zolpidem tartrate tablets 40 mg were similar, but not identical, to diazepam 20 mg, while zolpidem tartrate 10 mg was difficult to distinguish from placebo.

### 9.3 Dependence

Sedative/hypnotics have produced withdrawal signs and symptoms following abrupt discontinuation. These reported symptoms range from mild dysphoria and insomnia to a withdrawal syndrome that may include abdominal and muscle cramps, vomiting, sweating, tremors, and convulsions. The U.S. clinical trial experience from zolpidem does not reveal any clear evidence for withdrawal syndrome. Nevertheless, the following adverse events included in DSM-III-R criteria for uncomplicated sedative/hypnotic withdrawal were reported during U.S. clinical trials following placebo substitution occurring within 48 hours following last zolpidem treatment: fatigue, nausea, flushing, lightheadedness, uncontrolled crying, emesis, stomach cramps, panic attack, nervousness, and abdominal discomfort. These reported adverse events occurred at an incidence of 1% or less. However, available data cannot provide a reliable estimate of the incidence, if any, of dependence during treatment at recommended doses. Rare post-marketing reports of abuse, dependence and withdrawal have been received.

Because persons with a history of addiction to, or abuse of, drugs or alcohol are at increased risk of habituation and dependence, they should be under careful surveillance when receiving zolpidem or any other hypnotic.

## 10 OVERDOSAGE

### 10.1 Signs and symptoms

In European postmarketing reports of overdose with zolpidem alone, impairment of consciousness has ranged from somnolence to light coma. There was one case each of cardiovascular and respiratory compromise. Individuals have fully recovered from zolpidem tartrate overdoses up to 400 mg (40 times the maximum recommended dose). Overdose cases involving multiple CNS-depressant agents, including zolpidem, have resulted in more severe symptomatology, including fatal outcomes.

### 10.2 Recommended treatment

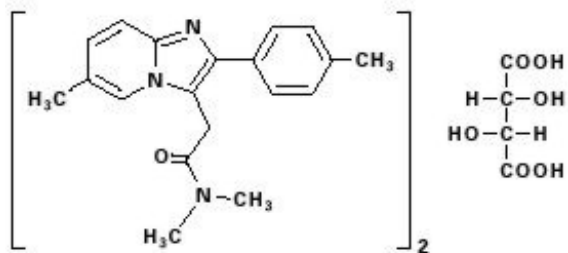
General symptomatic and supportive measures should be used along with immediate gastric lavage where appropriate. Intravenous fluids should be administered as needed. Flumazenil may be useful. As in all cases of drug overdose, respiration, pulse, blood pressure, and other appropriate signs should be monitored and general supportive measures employed. Hypotension and CNS depression should be monitored and treated by appropriate medical intervention. Sedating drugs should be withheld following zolpidem overdose, even if excitation occurs. The value of dialysis in the treatment of overdose has not been determined, although hemodialysis studies in patients with renal failure receiving therapeutic doses have demonstrated that zolpidem is not dialyzable.

**Poison control center:** As with the management of all overdose, the possibility of multiple drug ingestion should be considered. The physician may wish to consider contacting a poison control center for up-to-date information on the management of hypnotic drug product overdose.

## 11 DESCRIPTION

Zolpidem tartrate is a non-benzodiazepine hypnotic of the imidazopyridine class and is available in 5 mg and 10 mg strength tablets for oral administration.

Chemically, zolpidem is N,N,6-trimethyl-2-p-tolylimidazo[1,2-a]pyridine-3-acetamide L-(+)-tartrate (2:1). It has the following structure:



Zolpidem tartrate is a white to off-white crystalline powder that is sparingly soluble in water, alcohol, and propylene glycol. It has a molecular weight of 764.88.

Each zolpidem tartrate tablet includes the following inactive ingredients: hypromellose, lactose, magnesium stearate, microcrystalline cellulose, polyethylene glycol, sodium starch glycolate, and titanium dioxide; the 5-mg tablet also contains iron oxide red.

## 12 CLINICAL PHARMACOLOGY

### 12.1 Mechanism of action

Subunit modulation of the GABA<sub>A</sub> receptor chloride channel macromolecular complex is hypothesized to be responsible for sedative, anticonvulsant, anxiolytic, and myorelaxant drug properties. The major modulatory site of the GABA<sub>A</sub> receptor complex is located on its alpha ( $\alpha$ ) subunit and is referred to as the benzodiazepine (BZ) or omega ( $\omega$ ) receptor. At least three subtypes of the ( $\omega$ ) receptor have been identified.

While zolpidem is a hypnotic agent with a chemical structure unrelated to benzodiazepines, barbiturates, or other drugs with known hypnotic properties, it interacts with a GABA-BZ receptor complex and shares some of the pharmacological properties of the benzodiazepines. In contrast to the benzodiazepines, which non-selectively bind to and activate all omega receptor subtypes, zolpidem *in vitro* binds the ( $\omega_1$ ) receptor preferentially with a high affinity ratio of the alpha<sub>1</sub>/alpha<sub>5</sub> subunits. The ( $\omega_1$ ) receptor is found primarily on the Lamina IV of the sensorimotor cortical regions, substantia nigra (parsreticulata), cerebellum molecular layer, olfactory bulb, ventral thalamic complex, pons, inferior colliculus, and globus pallidus. This selective binding of zolpidem on the ( $\omega_1$ ) receptor is not absolute, but it may explain the relative absence of myorelaxant and anticonvulsant effects in animal studies as well as the preservation of deep sleep (stages 3 and 4) in human studies of zolpidem at hypnotic doses.

### 12.3 Pharmacokinetics

The pharmacokinetic profile of zolpidem tartrate tablets is characterized by rapid absorption from the GI tract and a short elimination half-life ( $T_{1/2}$ ) in healthy subjects.

In a single-dose crossover study in 45 healthy subjects administered 5 and 10 mg zolpidem tartrate tablets, the mean peak concentrations ( $C_{max}$ ) were 59 (range: 29 to 113) and 121 (range: 58 to 272) ng/mL, respectively, occurring at a mean time ( $T_{max}$ ) of 1.6 hours for both. The mean zolpidem tartrate tablets elimination half-life was 2.6 (range: 1.4 to 4.5) and 2.5 (range: 1.4 to 3.8) hours, for the 5 and 10 mg tablets, respectively. Zolpidem tartrate tablets are converted to inactive metabolites that are eliminated primarily by renal excretion. Zolpidem tartrate tablets demonstrated linear kinetics in the dose range of 5 to 20 mg. Total protein binding was found to be  $92.5 \pm 0.1\%$  and remained constant, independent of concentration between 40 and 790 ng/mL. Zolpidem did not accumulate in young adults following nightly dosing with 20 mg zolpidem tartrate tablets for 2 weeks.

A food-effect study in 30 healthy male volunteers compared the pharmacokinetics of zolpidem tartrate tablets 10 mg when administered while fasting or 20 minutes after a meal. Results demonstrated that with food, mean AUC and  $C_{max}$  were decreased by 15% and 25%, respectively, while mean  $T_{max}$  was

prolonged by 60% (from 1.4 to 2.2hr). The half-life remained unchanged. These results suggest that, for faster sleep onset, zolpidem tartrate tablets should not be administered with or immediately after a meal.

In the elderly, the dose for zolpidem tartrate tablets should be 5 mg [see *Warnings and Precautions (5) and Dosage and Administration (2)*]. This recommendation is based on several studies in which the mean  $C_{\max}$ ,  $T_{1/2}$ , and AUC were significantly increased when compared to results in young adults. In one study of eight elderly subjects (>70 years), the means for  $C_{\max}$ ,  $T_{1/2}$ , and AUC significantly increased by 50% (255 vs 384 ng/mL), 32% (2.2 vs 2.9 hr), and 64% (955 vs 1,562 ng·hr/mL), respectively, as compared to younger adults (20 to 40 years) following a single 20 mg oral dose. Zolpidem tartrate tablets do not accumulate in elderly subjects following nightly oral dosing of 10 mg for 1 week.

The pharmacokinetics of zolpidem tartrate tablets in eight patients with chronic hepatic insufficiency were compared to results in healthy subjects. Following a single 20 mg oral zolpidem dose, mean  $C_{\max}$  and AUC were found to be two times (250 vs 499 ng/mL) and five times (788 vs 4,203 ng·hr/mL) higher, respectively, in hepatically compromised patients.  $T_{\max}$  did not change. The mean half-life in cirrhotic patients of 9.9 hr (range: 4.1 to 25.8 hr) was greater than that observed in normals of 2.2 hr (range: 1.6 to 2.4 hr). Dosing should be modified accordingly in patients with hepatic insufficiency [see *Warnings and Precautions (5) and Dosage and Administration (2)*].

The pharmacokinetics of zolpidem tartrate were studied in 11 patients with end-stage renal failure (mean  $Cl_{Cr} = 6.5 \pm 1.5$  mL/min) undergoing hemodialysis three times a week, who were dosed with zolpidem 10 mg orally each day for 14 or 21 days. No statistically significant differences were observed for  $C_{\max}$ ,  $T_{\max}$ , half-life, and AUC between the first and last day of drug administration when baseline concentration adjustments were made. On day 1,  $C_{\max}$  was  $172 \pm 29$  ng/mL (range: 46 to 344 ng/mL). After repeated dosing for 14 or 21 days,  $C_{\max}$  was  $203 \pm 32$  ng/mL (range: 28 to 316 ng/mL). On day 1,  $T_{\max}$  was  $1.7 \pm 0.3$  hr (range: 0.5 to 3.0 hr); after repeated dosing  $T_{\max}$  was  $0.8 \pm 0.2$  hr (range: 0.5 to 2.0 hr). This variation is accounted for by noting that last-day serum sampling began 10 hours after the previous dose, rather than after 24 hours. This resulted in residual drug concentration and a shorter period to reach maximal serum concentration. On day 1,  $T_{1/2}$  was  $2.4 \pm 0.4$  hr (range: 0.4 to 5.1 hr). After repeated dosing,  $T_{1/2}$  was  $2.5 \pm 0.4$  hr (range: 0.7 to 4.2 hr). AUC was  $796 \pm 159$  ng·hr/mL after the first dose and  $818 \pm 170$  ng·hr/mL after repeated dosing. Zolpidem was not hemodialyzable. No accumulation of unchanged drug appeared after 14 or 21 days. Zolpidem tartrate tablet pharmacokinetics were not significantly different in renally impaired patients. No dosage adjustment is necessary in patients with compromised renal function. As a general precaution, these patients should be closely monitored.

***Postulated relationship between elimination rate of hypnotics and their profile of common untoward effects:*** The type and duration of hypnotic effects and the profile of unwanted effects during administration of hypnotic drugs may be influenced by the biologic half-life of administered drug and any active metabolites formed. When half-lives are long, drug or metabolites may accumulate during periods of nightly administration and be associated with impairment of cognitive and/or motor performance during waking hours; the possibility of interaction with other psychoactive drugs or alcohol will be enhanced. In contrast, if half-lives, including half-lives of active metabolites, are short, drug and metabolites will be cleared before the next dose is ingested, and carryover effects related to excessive sedation or CNS depression should be minimal or absent. Zolpidem tartrate tablets have a short half-life and no active metabolites. During nightly use for an extended period, pharmacodynamic tolerance or adaptation to some effects of hypnotics may develop. If the drug has a short elimination half-life, it is possible that a relative deficiency of the drug or its active metabolites (ie, in relationship to the receptor site) may occur at some point in the interval between each night's use. This sequence of events may account for two clinical findings reported to occur after several weeks of nightly use of other rapidly eliminated hypnotics, namely, increased wakefulness during the last third of the night, and the appearance of increased signs of daytime anxiety. Increased wakefulness during the last third of the night as measured by polysomnography has not been observed in clinical trials with zolpidem tartrate tablets.

## 13 NONCLINICAL TOXICOLOGY

### 13.1 Carcinogenesis, mutagenesis, impairment of fertility

**Carcinogenesis:** Zolpidem was administered to rats and mice for 2 years at dietary dosages of 4, 18, and 80 mg/kg/day. In mice, these doses are 26 to 520 times or 2 to 35 times the maximum 10 mg human dose on a mg/kg or mg/m<sup>2</sup> basis, respectively. In rats these doses are 43 to 876 times or 6 to 115 times the maximum 10 mg human dose on a mg/kg or mg/m<sup>2</sup> basis, respectively. No evidence of carcinogenic potential was observed in mice. Renal liposarcomas were seen in 4/100 rats (3 males, 1 female) receiving 80 mg/kg/day and a renal lipoma was observed in one male rat at the 18 mg/kg/day dose. Incidence rates of lipoma and liposarcoma for zolpidem were comparable to those seen in historical controls and the tumor findings are thought to be a spontaneous occurrence.

**Mutagenesis:** Zolpidem did not have mutagenic activity in several tests including the Ames test, genotoxicity in mouse lymphoma cells in vitro, chromosomal aberrations in cultured human lymphocytes, unscheduled DNA synthesis in rat hepatocytes in vitro, and the micronucleus test in mice.

**Impairment of fertility:** In a rat reproduction study, the high dose (100 mg base/kg) of zolpidem resulted in irregular estrus cycles and prolonged precoital intervals, but there was no effect on male or female fertility after daily oral doses of 4 to 100 mg base/kg or 5 to 130 times the recommended human dose in mg/m<sup>2</sup>. No effects on any other fertility parameters were noted.

## 14 CLINICAL STUDIES

### 14.1 Transient insomnia

Normal adults experiencing transient insomnia (n = 462) during the first night in a sleep laboratory were evaluated in a double-blind, parallel group, single-night trial comparing two doses of zolpidem (7.5 and 10 mg) and placebo. Both zolpidem doses were superior to placebo on objective (polysomnographic) measures of sleep latency, sleep duration, and number of awakenings.

Normal elderly adults (mean age 68) experiencing transient insomnia (n = 35) during the first two nights in a sleep laboratory were evaluated in a double-blind, crossover, 2-night trial comparing four doses of zolpidem (5, 10, 15 and 20 mg) and placebo. All zolpidem doses were superior to placebo on the two primary PSG parameters (sleep latency and efficiency) and all four subjective outcome measures (sleep duration, sleep latency, number of awakenings, and sleep quality).

### 14.2 Chronic insomnia

Zolpidem was evaluated in two controlled studies for the treatment of patients with chronic insomnia (most closely resembling primary insomnia, as defined in the APA Diagnostic and Statistical Manual of Mental Disorders, DSM-IV<sup>TM</sup>). Adult outpatients with chronic insomnia (n = 75) were evaluated in a double-blind, parallel group, 5-week trial comparing two doses of zolpidem tartrate (10 and 15 mg) and placebo. On objective (polysomnographic) measures of sleep latency and sleep efficiency, zolpidem 15 mg was superior to placebo for all 5 weeks; zolpidem 10 mg was superior to placebo on sleep latency for the first 4 weeks and on sleep efficiency for weeks 2 and 4. Zolpidem was comparable to placebo on number of awakenings at both doses studied.

Adult outpatients (n=141) with chronic insomnia were also evaluated, in a double-blind, parallel group, 4-week trial comparing two doses of zolpidem (10 and 15 mg) and placebo. Zolpidem 10 mg was superior to placebo on a subjective measure of sleep latency for all 4 weeks, and on subjective measures of total sleep time, number of awakenings, and sleep quality for the first treatment week. Zolpidem 15 mg was superior to placebo on a subjective measure of total sleep latency for the first 3 weeks, on a subjective measure of total sleep time for the first week, and on number of awakenings and



sleep quality for the first 2 weeks.

### 14.3 Studies Pertinent To Safety Concerns For Sedative/Hypnotic Drugs

**Next-day residual effects:** Next-day residual effects of zolpidem tartrate tablets were evaluated in seven studies involving normal volunteers. In three studies in adults (including one study in a phase advance model of transient insomnia) and in one study in elderly subjects, a small but statistically significant decrease in performance was observed in the Digit Symbol Substitution Test (DSST) when compared to placebo. Studies of zolpidem tartrate tablets in non-elderly patients with insomnia did not detect evidence of next-day residual effects using the DSST, the Multiple Sleep Latency Test (MSLT), and patient ratings of alertness.

**Rebound effects:** There was no objective (polysomnographic) evidence of rebound insomnia at recommended doses seen in studies evaluating sleep on the nights following discontinuation of zolpidem tartrate tablets. There was subjective evidence of impaired sleep in the elderly on the first post-treatment night at doses above the recommended elderly dose of 5 mg.

**Memory impairment:** Controlled studies in adults utilizing objective measures of memory yielded no consistent evidence of next-day memory impairment following the administration of zolpidem tartrate tablets. However, in one study involving zolpidem doses of 10 and 20 mg, there was a significant decrease in next-morning recall of information presented to subjects during peak drug effect (90 minutes post-dose), ie, these subjects experienced anterograde amnesia. There was also subjective evidence from adverse event data for anterograde amnesia occurring in association with the administration of zolpidem tartrate tablets, predominantly at doses above 10 mg.

**Effects on sleep stages:** In studies that measured the percentage of sleep time spent in each sleep stage, zolpidem tartrate tablets have generally been shown to preserve sleep stages. Sleep time spent in stages 3 and 4 (deep sleep) was found comparable to placebo with only inconsistent, minor changes in REM (paradoxical) sleep at the recommended dose.

## 16 HOW SUPPLIED/STORAGE AND HANDLING

### 16.1 How Supplied

Zolpidem tartrate tablets, 5 mg: Pink, round, film-coated tablets, debossed with "ZIM" on one side and "5" on the other side.

Bottles of 100's ..... NDC 63672-3005-1

Bottles of 500's ..... NDC 63672-3005-2

**Zolpidem tartrate tablets, 10 mg:** White, round, film-coated tablets, debossed with "ZIM" on one side and "10" on the other side.

Bottles of 100's ..... NDC 63672-3010-1

Bottles of 500's ..... NDC 63672-3010-2

### 16.2 Storage and handling

Store at controlled room temperature 20°–25° C (68°–77°F).

## 17 PATIENT COUNSELING INFORMATION

### 17.1 General

Patient information is printed at the end of this insert. To assure safe and effective use of zolpidem tartrate tablets, this information and instructions provided in the patient information section should be

discussed with patients.

## 17.2 FDA-approved patient labeling

Your doctor has prescribed zolpidem tartrate tablets to help you sleep. The following information is intended to guide you in the safe use of this medicine. It is not meant to take the place of your doctor's instructions. If you have any questions about zolpidem tartrate tablets, be sure to ask your doctor or pharmacist.

Zolpidem tartrate tablets are used to treat different types of sleep problems in adults, such as:

- trouble falling asleep
- waking up too early in the morning
- waking up often during the night

Some people may have more than one of these problems

Zolpidem tartrate tablets belong to a group of medicines known as the "sedative/hypnotics," or simply, sleep medicines. There are many different sleep medicines available to help people sleep better. Sleep problems are usually temporary, requiring treatment for only a short time, usually 1 or 2 days up to 1 or 2 weeks. Some people have chronic sleep problems that may require more prolonged use of sleep medicine. However, you should not use these medicines for long periods without talking with your doctor about the risks and benefits of prolonged use.

### SIDE EFFECTS

**Most common side effects:** All medicines have side effects. Most common side effects of sleep medicines include

- drowsiness
- dizziness
- lightheadedness
- difficulty with coordination

You may find that these medicines make you sleepy during the day. How drowsy you feel depends upon how your body reacts to the medicine, which sleep medicine you are taking, and how large a dose your doctor has prescribed. Daytime drowsiness is best avoided by taking the lowest dose possible that will still help you sleep at night. Your doctor will work with you to find the dose of zolpidem tartrate tablets that is best for you.

To manage these side effects while you are taking this medicine:

- When you first start taking zolpidem tartrate tablets or any other sleep medicine until you know whether the medicine will still have some carryover effect in you the next day, use extreme care while doing anything that requires complete alertness, such as driving a car, operating machinery, or piloting an aircraft.
- NEVER drink alcohol while you are being treated with zolpidem tartrate tablets or any sleep medicine. Alcohol can increase the side effects of zolpidem tartrate tablets or any other sleep medicine.
- Do not take any other medicines without asking your doctor first. This includes medicines you can buy without a prescription. Some medicines can cause drowsiness and are best avoided while taking zolpidem tartrate tablets.
- Always take the exact dose of zolpidem tartrate tablets prescribed by your doctor. Never change your dose without talking to your doctor first.

### SPECIAL CONCERNS

There are some special problems that may occur while taking sleep medicines.

**"Sleep-Driving" and other complex behaviors:** There have been reports of people getting out of bed

after taking a sleep medicine and driving their cars while not fully awake, often with no memory of the event. If you experience such an event, it should be reported to your doctor immediately, since "sleep-driving" can be dangerous. This behavior is more likely to occur when zolpidem tartrate tablets are taken with alcohol or other drugs such as those for the treatment of depression or anxiety. Other behaviors such as preparing and eating food, making phone calls, or having sex have been reported in people who are not fully awake after taking a sleep medicine. As with "sleep-driving", people usually do not remember these events.

**Memory problems:** Sleep medicines may cause a special type of memory loss or "amnesia." When this occurs, a person may not remember what has happened for several hours after taking the medicine. This is usually not a problem since most people fall asleep after taking the medicine.

Memory loss can be a problem, however, when sleep medicines are taken while traveling, such as during an airplane flight and the person wakes up before the effect of the medicine is gone. This has been called "traveler's amnesia."

Memory problems are not common while taking zolpidem tartrate tablets. In most instances memory problems can be avoided if you take zolpidem tartrate tablets only when you are able to get a full night's sleep (7 to 8 hours) before you need to be active again. Be sure to talk to your doctor if you think you are having memory problems.

**Tolerance:** When sleep medicines are used every night for more than a few weeks, they may lose their effectiveness to help you sleep. This is known as "tolerance." Sleep medicines should, in most cases, be used only for short periods of time, such as 1 or 2 days and generally no longer than 1 or 2 weeks. If your sleep problems continue, consult your doctor, who will determine whether other measures are needed to overcome your sleep problems.

**Dependence:** Sleep medicines can cause dependence, especially when these medicines are used regularly for longer than a few weeks or at high doses. Some people develop a need to continue taking their medicines. This is known as dependence or "addiction."

When people develop dependence, they may have difficulty stopping the sleep medicine. If the medicine is suddenly stopped, the body is not able to function normally and unpleasant symptoms (see *Withdrawal*) may occur. They may find they have to keep taking the medicine either at the prescribed dose or at increasing doses just to avoid withdrawal symptoms.

All people taking sleep medicines have some risk of becoming dependent on the medicine. However, people who have been dependent on alcohol or other drugs in the past may have a higher chance of becoming addicted to sleep medicines. This possibility must be considered before using these medicines for more than a few weeks.

If you have been addicted to alcohol or drugs in the past, it is important to tell your doctor before starting zolpidem tartrate tablets or any sleep medicine.

**Withdrawal:** Withdrawal symptoms may occur when sleep medicines are stopped suddenly after being used daily for a long time. In some cases, these symptoms can occur even if the medicine has been used for only a week or two.

In mild cases, withdrawal symptoms may include unpleasant feelings. In more severe cases, abdominal and muscle cramps, vomiting, sweating, shakiness, and rarely, seizures may occur. These more severe withdrawal symptoms are very uncommon.

Another problem that may occur when sleep medicines are stopped is known as "rebound insomnia." This means that a person may have more trouble sleeping the first few nights after the medicine is stopped than before starting the medicine. If you should experience rebound insomnia, do not get discouraged. This problem usually goes away on its own after 1 or 2 nights.

If you have been taking zolpidem tartrate tablets or any other sleep medicine for more than 1 or 2 weeks, do not stop taking it on your own. Always follow your doctor's directions.

**Changes in behavior and thinking:** Some people using sleep medicines have experienced unusual changes in their thinking and/or behavior. These effects are not common. However, they have included:

- more outgoing or aggressive behavior than normal
- loss of personal identity
- confusion
- strange behavior
- agitation
- hallucinations
- worsening of depression
- suicidal thoughts

How often these effects occur depends on several factors, such as a person's general health, the use of other medicines, and which sleep medicine is being used. Clinical experience with zolpidem tartrate tablets suggests that it is uncommonly associated with these behavior changes.

It is also important to realize that it is rarely clear whether these behavior changes are caused by the medicine, an illness, or occur on their own. In fact, sleep problems that do not improve may be due to illnesses that were present before the medicine was used. If you or your family notice any changes in your behavior, or if you have any unusual or disturbing thoughts, call your doctor immediately.

**Pregnancy:** Sleep medicines may cause sedation of the unborn baby when used during the last weeks of pregnancy.

Be sure to tell your doctor if you are pregnant, if you are planning to become pregnant, or if you become pregnant while taking zolpidem tartrate tablets.

**Children:** Zolpidem tartrate tablets have not been shown to help children fall asleep. Hallucinations, headache and dizziness have all been reported as side effects in children who were given zolpidem tartrate tablets.

## **SAFE USE OF SLEEPING MEDICINES**

To ensure the safe and effective use of zolpidem tartrate tablets or any other sleep medicine, you should observe the following cautions:

1. Zolpidem tartrate tablet is a prescription medicine and should be used **ONLY** as directed by your doctor. Follow your doctor's instructions about how to take, when to take, and how long to take zolpidem tartrate tablets.
2. Never use zolpidem tartrate tablets or any other sleep medicine for longer than directed by your doctor.
3. If you develop an allergic reaction such as a rash, hives, shortness of breath, or swelling of your tongue or throat when using zolpidem tartrate tablets or any other sleep medicine, discontinue zolpidem tartrate tablets or other sleep medicine immediately and contact your doctor.
4. If you notice any unusual and/or disturbing thoughts or behavior during treatment with zolpidem tartrate tablets or any other sleep medicine, contact your doctor.
5. Tell your doctor about any medicines you may be taking, including medicines you may buy without a prescription. You should also tell your doctor if you drink alcohol. **DO NOT** use alcohol while taking zolpidem tartrate tablets or any other sleep medicine.
6. Do not take zolpidem tartrate tablets unless you are able to get a full night's sleep before you must be active again. For example, zolpidem tartrate tablets should not be taken on an overnight airplane flight of less than 7 to 8 hours since "traveler's amnesia" may occur.
7. Do not increase the prescribed dose of zolpidem tartrate tablets or any other sleep medicine unless instructed by your doctor.
8. When you first start taking zolpidem tartrate tablets or any other sleep medicine until you know whether the medicine will still have some carryover effect in you the next day, use extreme care while doing anything that requires complete alertness, such as driving a car, operating machinery, or

- piloting an aircraft.
9. Be aware that you may have more sleeping problems the first night or two after stopping zolpidem tartrate tablets or any other sleep medicine.
  10. Be sure to tell your doctor if you are pregnant, if you are planning to become pregnant, or if you become pregnant while taking zolpidem tartrate tablets.
  11. As with all prescription medicines, never share zolpidem tartrate tablets or any other sleep medicine with anyone else. Always store zolpidem tartrate tablets or any other sleep medicine in the original container out of reach of children.
  12. Zolpidem tartrate tablets work very quickly. You should only take zolpidem tartrate tablets right before going to bed and are ready to go to sleep.

*Manufactured for:*

**Synthon Pharmaceuticals, Inc.**  
 Research Triangle Park, NC 27709

*Manufactured by:*

**Metrics, Inc.**  
 Greenville, NC 27834

Issue Date: April 2007

PI-3000-0

60293

<b>ZOLPIDEM TARTRATE</b>			
zolpidem tartrate tablet, film coated			
<b>Product Information</b>			
<b>Product Type</b>		<b>Item Code (Source)</b>	NDC:63672-3005
<b>Route of Administration</b>	ORAL	<b>DEA Schedule</b>	CIV
<b>Active Ingredient/Active Moiety</b>			
	<b>Ingredient Name</b>	<b>Basis of Strength</b>	<b>Strength</b>
	Zolpidem tartrate (UNII: WY6W63843K) (Zolpidem - UNII:7K383OQI23)		5 mg
<b>Inactive Ingredients</b>			
	<b>Ingredient Name</b>	<b>Strength</b>	
	hypromellose ()		
	iron oxide red ()		
	lactose ()		
	magnesium stearate (UNII: 70097M6I30)		
	microcrystalline cellulose ()		
	polyethylene glycol ()		
	sodium starch glycolate ()		
	titanium dioxide (UNII: 15FIX9V2JP)		

**Product Characteristics**

<b>Color</b>	PINK (Pink)	<b>Score</b>	no score
<b>Shape</b>	ROUND	<b>Size</b>	7mm
<b>Flavor</b>		<b>Imprint Code</b>	ZIM;5
<b>Contains</b>			
<b>Coating</b>	true	<b>Symbol</b>	false

**Packaging**

#	Item Code	Package Description	Marketing Start Date	Marketing End Date
1	NDC:63672-3005-1	100 in 1 BOTTLE		
2	NDC:63672-3005-2	500 in 1 BOTTLE		

**ZOLPIDEM TARTRATE**

zolpidem tartrate tablet, film coated

**Product Information**

<b>Product Type</b>		<b>Item Code (Source)</b>	NDC:63672-3010
<b>Route of Administration</b>	ORAL	<b>DEA Schedule</b>	CIV

**Active Ingredient/Active Moiety**

Ingredient Name	Basis of Strength	Strength
Zolpidem tartrate (UNII: WY6W63843K) (Zolpidem - UNII:7K383OQI23)		10 mg

**Inactive Ingredients**

Ingredient Name	Strength
hypromellose ()	
lactose ()	
magnesium stearate (UNII: 70097M6I30)	
microcrystalline cellulose ()	
polyethylene glycol ()	
sodium starch glycolate ()	
titanium dioxide (UNII: 15FIX9V2JP)	

**Product Characteristics**

<b>Color</b>	WHITE (White)	<b>Score</b>	no score
<b>Shape</b>	ROUND (Round)	<b>Size</b>	9mm
<b>Flavor</b>		<b>Imprint Code</b>	ZIM;10
<b>Contains</b>			
<b>Coating</b>	true	<b>Symbol</b>	false

**Packaging**

#	Item Code	Package Description	Marketing Start Date	Marketing End Date
1	NDC:63672-3010-1	100 in 1 BOTTLE		
2	NDC:63672-3010-2	500 in 1 BOTTLE		

**Labeler** - Synthon Pharmaceuticals, Inc.

Revised: 5/2007

Synthon Pharmaceuticals, Inc.