

## TRADENAME (Citalopram HBr) Orally Disintegrating Tablets

Rx Only

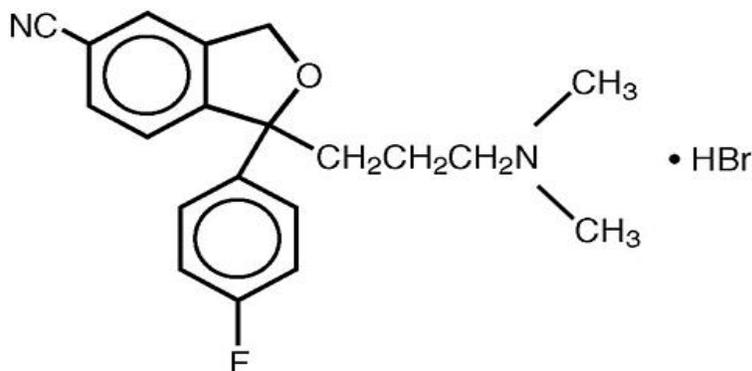
**Antidepressants increased the risk of suicidal thinking and behavior (suicidality) in short-term studies in children and adolescents with Major Depressive Disorder (MDD) and other psychiatric disorders. Anyone considering the use of [Insert established name] or any other antidepressant in a child or adolescent must balance this risk with the clinical need.**

**Patients who are started on therapy should be observed closely for clinical worsening, suicidality, or unusual changes in behavior. Families and caregivers should be advised of the need for close observation and communication with the prescriber. TRADENAME is not approved for use in pediatric patients. (See Warnings and Precautions: Pediatric Use)**

**Pooled analyses of short-term (4 to 16 weeks) placebo-controlled trials of 9 antidepressant drugs (SSRIs and others) in children and adolescents with major depressive disorder (MDD), obsessive compulsive disorder (OCD), or other psychiatric disorders (a total of 24 trials involving over 4400 patients) have revealed a greater risk of adverse events representing suicidal thinking or behavior (suicidality) during the first few months of treatment in those receiving antidepressants. The average risk of such events in patients receiving antidepressants was 4%, twice the placebo risk of 2%. No suicides occurred in these trials.**

### DESCRIPTION

TRADENAME (citalopram HBr) is an orally administered selective serotonin reuptake inhibitor (SSRI) with a chemical structure unrelated to that of other SSRIs or of tricyclic, tetracyclic, or other available antidepressant agents. Citalopram HBr is a racemic bicyclic phthalane derivative designated 1-[3-(dimethylamino)-propyl]-1-(p-fluorophenyl)-5-phthalanecarbonitrile monohydrobromide with the following structural formula:



The molecular formula is  $C_{20}H_{21}FN_2O \cdot HBr$  and its molecular weight is 405.30.

Citalopram HBr occurs as a fine white to off-white powder. Citalopram HBr is sparingly soluble in water and soluble in ethanol.

TRADENAME is available as orally disintegrating tablets based on CEFORM<sup>®</sup> technology. TRADENAME 10 mg, 20 mg and 40 mg tablets are dimpled round tablets debossed on one side containing citalopram HBr in strengths equivalent to 10 mg, 20 mg and 40 mg citalopram base.

The tablets also contain the following inactive ingredients: glyceryl distearate, stearyl macrogolglyceride, polyacrylate dispersion 30%, hypromellose 2910, talc, mannitol, microcrystalline cellulose, low substituted hydroxypropyl cellulose, crospovidone, sodium stearyl fumarate, silicon dioxide, acesulfame potassium, monoammonium glycyrrhizinate and citric acid. In addition to the above ingredients the 10 mg tablets contain tangerine orange flavor and FD&C Yellow No. 6, the 20 mg tablets contain tangerine orange flavor, and the 40 mg tablets contain natural lemon lime flavor and Green Lake Blend LB-211.

## **CLINICAL PHARMACOLOGY**

### **Pharmacodynamics**

The mechanism of action of citalopram HBr as an antidepressant is presumed to be linked to potentiation of serotonergic activity in the central nervous system resulting from its inhibition of CNS neuronal reuptake of serotonin (5-HT). *In vitro* and *in vivo* studies in animals suggest that citalopram is a highly selective serotonin reuptake inhibitor (SSRI) with minimal effects on norepinephrine (NE) and dopamine (DA) neuronal reuptake. Tolerance to the inhibition of 5-HT uptake is not induced by long-term (14-day) treatment of rats with citalopram. Citalopram is a racemic mixture (50/50), and the inhibition of 5-HT reuptake by citalopram is primarily due to the (S)-enantiomer.

Citalopram has no or very low affinity for 5-HT<sub>1A</sub>, 5-HT<sub>2A</sub>, dopamine D<sub>1</sub> and D<sub>2</sub>,  $\alpha_1$ -,  $\alpha_2$ -, and  $\beta$ -adrenergic, histamine H<sub>1</sub>, gamma aminobutyric acid (GABA), muscarinic cholinergic, and benzodiazepine receptors. Antagonism of muscarinic, histaminergic, and adrenergic receptors has been hypothesized to be associated with various anticholinergic, sedative, and cardiovascular effects of other psychotropic drugs.

### **Pharmacokinetics**

The single- and multiple-dose pharmacokinetics of citalopram are linear and dose-proportional in a dose range of 10-60 mg/day. Biotransformation of citalopram is mainly hepatic, with a mean terminal half-life of about 35 hours. With once daily dosing, steady state plasma concentrations are achieved within approximately one week. At steady state, the extent of accumulation of citalopram in plasma, based on the half-life, is expected to be 2.5 times the plasma concentrations observed after a single dose.

TRADENAME citalopram tablets are bioequivalent to Celexa™ tablets.

### Absorption and Distribution

Following a single oral dose (40 mg tablet) of citalopram, peak plasma levels occur at about 5 hours. The absolute bioavailability of citalopram was about 80% relative to an intravenous dose, and absorption is not affected by food. The pharmacokinetics of 10, 20, and 40 mg dosage strengths of the orally disintegrating tablet are dose proportional. The volume of distribution of citalopram is about 12 L/kg and the binding of citalopram (CT), demethylcitalopram (DCT) and didemethylcitalopram (DDCT) to human plasma proteins is about 80%.

Oral administration of TRADENAME with a high-fat content meal did not significantly affect the rate or extent of drug absorption; therefore, TRADENAME can be administered with or without food.

TRADENAME can be administered with or without water.

### Metabolism and Elimination

Following intravenous administrations of citalopram, the fraction of drug recovered in the urine as citalopram and DCT was about 10% and 5%, respectively. The systemic clearance of citalopram was 330 mL/min, with approximately 20% of that due to renal clearance.

Citalopram is metabolized to demethylcitalopram (DCT), didemethylcitalopram (DDCT), citalopram-N-oxide, and a deaminated propionic acid derivative. In humans, unchanged citalopram is the predominant compound in plasma. At steady state, the concentrations of citalopram's metabolites, DCT and DDCT, in plasma are approximately one-half and one-tenth, respectively, that of the parent drug. *In vitro* studies show that citalopram is at least 8 times more potent than its metabolites in the inhibition of serotonin reuptake, suggesting that the metabolites evaluated do not likely contribute significantly to the antidepressant actions of citalopram.

*In vitro* studies using human liver microsomes indicated that CYP3A4 and CYP2C19 are the primary isozymes involved in the N-demethylation of citalopram.

### Population subgroups

**Age** - Citalopram pharmacokinetics in subjects  $\geq 60$  years of age were compared to younger subjects in two normal volunteer studies. In a single-dose study, citalopram AUC and half-life were increased in the elderly subjects by 30% and 50%, respectively, whereas in a multiple-dose study they were increased by 23% and 30%, respectively. 20 mg is the recommended dose for most elderly patients (see Dosage and Administration).

**Gender** – Following a single oral dose of TRADENAME in 4 pharmacokinetic studies involving 92 male and 63 female subjects, no gender effect was observed.

There were no gender differences in the pharmacokinetics of DCT and DDCT. In clinical studies, no differences in steady state serum citalopram levels were seen between men (N=237) and women (N=388). No adjustment of dosage on the basis of gender is recommended.

**Reduced hepatic function** - Citalopram oral clearance was reduced by 37% and half-life was doubled in patients with reduced hepatic function compared to normal subjects. 20 mg is the recommended dose for most hepatically impaired patients (see Dosage and Administration).

**Reduced renal function** - In patients with mild to moderate renal function impairment, oral clearance of citalopram was reduced by 17% compared to normal subjects. No adjustment of dosage for such patients is recommended. No information is available about the pharmacokinetics of citalopram in patients with severely reduced renal function (creatinine clearance  $< 20$  mL/min).

### Drug-Drug Interactions

*In vitro* enzyme inhibition data did not reveal an inhibitory effect of citalopram on CYP3A4, -2C9, or -2E1, but did suggest that it is a weak inhibitor of CYP1A2, -2D6, and -2C19.

Citalopram would be expected to have little inhibitory effect on *in vivo* metabolism mediated by these cytochromes. However, *in vivo* data to address this question are limited.

Since CYP3A4 and 2C19 are the primary enzymes involved in the metabolism of citalopram, it is expected that potent inhibitors of 3A4 (e.g., ketoconazole, itraconazole, and macrolide antibiotics) and potent inhibitors of CYP2C19 (e.g., omeprazole) might decrease the clearance of citalopram. However, coadministration of citalopram and the potent 3A4 inhibitor ketoconazole did not significantly affect the pharmacokinetics of citalopram. Because citalopram is metabolized by multiple enzyme systems, inhibition of a single enzyme may not appreciably decrease citalopram clearance. Citalopram steady state levels were not significantly different in poor metabolizers and extensive 2D6 metabolizers after multiple-dose administration of citalopram HBr, suggesting that coadministration, with citalopram HBr, of a drug that inhibits CYP2D6, is unlikely to have clinically significant effects on citalopram metabolism. See Drug Interactions under Precautions for more detailed information on available drug interaction data.

### **Clinical Efficacy Trials**

The efficacy of citalopram HBr as a treatment for depression was established in two placebo-controlled studies (of 4 to 6 weeks in duration) in adult outpatients (ages 18-66) meeting DSM-III or DSM-III-R criteria for major depression. Study 1, a 6-week trial in which patients received fixed citalopram HBr doses of 10, 20, 40, and 60 mg/day, showed that citalopram HBr at doses of 40 and 60 mg/day was effective as measured by the Hamilton Depression Rating Scale (HAMD) total score, the HAMD depressed mood item (Item 1), the Montgomery Asberg Depression Rating Scale, and the Clinical Global Impression (CGI) Severity scale. This study showed no clear effect of the 10 and 20 mg/day doses, and the 60 mg/day dose was not more effective than the 40 mg/day dose. In study 2, a 4-week, placebo-controlled trial in depressed patients, of whom 85% met criteria for melancholia, the initial dose was 20 mg/day, followed by titration to the maximum tolerated dose or a maximum dose of 80 mg/day. Patients treated with citalopram HBr showed significantly greater improvement than placebo patients on the HAMD total score, HAMD item 1, and the CGI Severity score. In three additional placebo-controlled depression trials, the difference in response to treatment between patients receiving citalopram HBr and patients receiving placebo was not statistically significant, possibly due to high spontaneous response rate, smaller sample size, or, in the case of one study, too low a dose.

In two long-term studies, depressed patients who had responded to citalopram HBr during an initial 6 or 8 weeks of acute treatment (fixed doses of 20 or 40 mg/day in one study and flexible doses of 20-60 mg/day in the second study) were randomized to continuation of citalopram HBr or to placebo. In both studies, patients receiving continued citalopram HBr treatment experienced significantly lower relapse rates over the subsequent 6 months compared to those receiving placebo. In the fixed-dose study, the decreased rate of depression relapse was similar in patients receiving 20 or 40 mg/day of citalopram HBr.

Analyses of the relationship between treatment outcome and age, gender, and race did not suggest any differential responsiveness on the basis of these patient characteristics.

### **Comparison of Clinical Trial Results**

Highly variable results have been seen in the clinical development of all antidepressant drugs. Furthermore, in those circumstances when the drugs have not been studied in the same controlled clinical trial(s), comparisons among the results of studies evaluating the effectiveness of different antidepressant drug products are inherently unreliable. Because conditions of testing (e.g., patient samples, investigators, doses of the treatments administered and compared, outcome

measures, etc.) vary among trials, it is virtually impossible to distinguish a difference in drug effect from a difference due to one of the confounding factors just enumerated.

## **INDICATIONS AND USAGE**

TRADENAME (citalopram HBr) is indicated for the treatment of depression.

The efficacy of citalopram HBr in the treatment of depression was established in 4-6 week, controlled trials of outpatients whose diagnosis corresponded most closely to the DSM-III and DSM-III-R category of major depressive disorder (see Clinical Pharmacology).

A major depressive episode (DSM-IV) implies a prominent and relatively persistent (nearly every day for at least 2 weeks) depressed or dysphoric mood that usually interferes with daily functioning, and includes at least five of the following nine symptoms: depressed mood, loss of interest in usual activities, significant change in weight and/or appetite, insomnia or hypersomnia, psychomotor agitation or retardation, increased fatigue, feelings of guilt or worthlessness, slowed thinking or impaired concentration, a suicide attempt or suicidal ideation.

The antidepressant action of citalopram HBr in hospitalized depressed patients has not been adequately studied.

The efficacy of citalopram HBr in maintaining an antidepressant response for up to 24 weeks following 6 to 8 weeks of acute treatment was demonstrated in two placebo-controlled trials (see Clinical Pharmacology). Nevertheless, the physician who elects to use citalopram HBr for extended periods should periodically re-evaluate the long-term usefulness of the drug for the individual patient.

## **CONTRAINDICATIONS**

Concomitant use in patients taking monoamine oxidase inhibitors (MAOIs) is contraindicated (see Warnings).

TRADENAME is contraindicated in patients with a hypersensitivity to citalopram or any of the inactive ingredients in TRADENAME.

## **WARNINGS**

### **Clinical Worsening and Suicide Risk**

Patients with major depressive disorder (MDD), both adult and pediatric, may experience worsening of their depression and/or the emergence of suicidal ideation and behavior (suicidality) or unusual changes in behavior, whether or not they are taking antidepressant medications, and this risk may persist until significant remission occurs. There has been a long-standing concern that antidepressants may have a role in inducing worsening of depression and the emergence of suicidality in certain patients. Antidepressants increased the risk of suicidal thinking and behavior (suicidality) in short-term studies in children and adolescents with Major Depressive Disorder (MDD) and other psychiatric disorders.

Pooled analyses of short-term placebo-controlled trials of 9 antidepressant drugs (SSRIs and others) in children and adolescents with MDD, OCD, or other psychiatric disorders (a total of 24 trials involving over 4400 patients) have revealed a greater risk of adverse events representing suicidal behavior or thinking (suicidality) during the first few months of treatment in those

receiving antidepressants. The average risk of such events in patients receiving antidepressants was 4%, twice the placebo risk of 2%. There was considerable variation in risk among drugs, but a tendency toward an increase for almost all drugs studied. The risk of suicidality was most consistently observed in the MDD trials, but there were signals of risk arising from some trials in other psychiatric indications (obsessive compulsive disorder and social anxiety disorder) as well. No suicides occurred in any of these trials. It is unknown whether the suicidality risk in pediatric patients extends to longer-term use, i.e., beyond several months. It is also unknown whether the suicidality risk extends to adults.

**All pediatric patients being treated with antidepressants for any indication should be observed closely for clinical worsening, suicidality, and unusual changes in behavior, especially during the initial few months of a course of drug therapy, or at times of dose changes, either increases or decreases. Such observation would generally include at least weekly face-to-face contact with patients or their family members or caregivers during the first 4 weeks of treatment, then every other week visits for the next 4 weeks, then at 12 weeks, and as clinically indicated beyond 12 weeks. Additional contact by telephone may be appropriate between face-to-face visits.**

**Adults with MDD or co-morbid depression in the setting of other psychiatric illness being treated with antidepressants should be observed similarly for clinical worsening and suicidality, especially during the initial few months of a course of drug therapy, or at times of dose changes, either increases or decreases.**

The following symptoms, anxiety, agitation, panic attacks, insomnia, irritability, hostility, aggressiveness, impulsivity, akathisia (psychomotor restlessness), hypomania, and mania, have been reported in adult and pediatric patients being treated with antidepressants for major depressive disorder as well as for other indications, both psychiatric and nonpsychiatric. Although a causal link between the emergence of such symptoms and either the worsening of depression and/or the emergence of suicidal impulses has not been established, there is concern that such symptoms may represent precursors to emerging suicidality.

Consideration should be given to changing the therapeutic regimen, including possibly discontinuing the medication, in patients whose depression is persistently worse, or who are experiencing emergent suicidality or symptoms that might be precursors to worsening depression or suicidality, especially if these symptoms are severe, abrupt in onset, or were not part of the patient's presenting symptoms.

If the decision has been made to discontinue treatment, medication should be tapered, as rapidly as is feasible, but with recognition that abrupt discontinuation can be associated with certain symptoms (see PRECAUTIONS and DOSAGE AND ADMINISTRATION—Discontinuation of Treatment with TRADENAME for a description of the risks of discontinuation of TRADENAME).

**Families and caregivers of pediatric patients being treated with antidepressants for major depressive disorder or other indications, both psychiatric and nonpsychiatric, should be alerted about the need to monitor patients for the emergence of agitation, irritability, unusual changes in behavior, and the other symptoms described above, as well as the emergence of suicidality, and to report such symptoms immediately to health care**

**providers. Such monitoring should include daily observation by families and caregivers.** Prescriptions for TRADENAME should be written for the smallest quantity of tablets consistent with good patient management, in order to reduce the risk of overdose. Families and caregivers of adults being treated for depression should be similarly advised.

**Screening Patients for Bipolar Disorder:** A major depressive episode may be the initial presentation of bipolar disorder. It is generally believed (though not established in controlled trials) that treating such an episode with an antidepressant alone may increase the likelihood of precipitation of a mixed/manic episode in patients at risk for bipolar disorder. Whether any of the symptoms described above represent such a conversion is unknown. However, prior to initiating treatment with an antidepressant, patients with depressive symptoms should be adequately screened to determine if they are at risk for bipolar disorder; such screening should include a detailed psychiatric history, including a family history of suicide, bipolar disorder, and depression. It should be noted that Citalopram is not approved for use in treating bipolar depression.

#### **Potential for Interaction with Monoamine Oxidase Inhibitors**

**In patients receiving serotonin reuptake inhibitor drugs in combination with a monoamine oxidase inhibitor (MAOI), there have been reports of serious, sometimes fatal, reactions including hyperthermia, rigidity, myoclonus, autonomic instability with possible rapid fluctuations of vital signs, and mental status changes that include extreme agitation progressing to delirium and coma. These reactions have also been reported in patients who have recently discontinued SSRI treatment and have been started on a MAOI. Some cases presented with features resembling neuroleptic malignant syndrome. Furthermore, limited animal data on the effects of combined use of SSRIs and MAOIs suggest that these drugs may act synergistically to elevate blood pressure and evoke behavioral excitation. Therefore, it is recommended that TRADENAME should not be used in combination with a MAOI, or within 14 days of discontinuing treatment with a MAOI. Similarly, at least 14 days should be allowed after stopping TRADENAME before starting a MAOI.**

### **PRECAUTIONS**

#### **General**

##### Discontinuation of Treatment with TRADENAME

During marketing of citalopram HBr and other SSRIs and SNRIs (serotonin and norepinephrine reuptake inhibitors), there have been spontaneous reports of adverse events occurring upon discontinuation of these drugs, particularly when abrupt, including the following: dysphoric mood, irritability, agitation, dizziness, sensory disturbances (e.g., paresthesias such as electric shock sensations), anxiety, confusion, headache, lethargy, emotional lability, insomnia, and hypomania. While these events are generally self-limiting, there have been reports of serious discontinuation symptoms.

Patients should be monitored for these symptoms when discontinuing treatment with TRADENAME. A gradual reduction in the dose rather than abrupt cessation is recommended whenever possible. If intolerable symptoms occur following a decrease in the dose or upon discontinuation of treatment, then resuming the previously prescribed dose may be considered. Subsequently, the physician may continue decreasing the dose but at a more gradual rate (see DOSAGE AND ADMINISTRATION).

### Abnormal Bleeding

Published case reports have documented the occurrence of bleeding episodes in patients treated with psychotropic drugs that interfere with serotonin reuptake. Subsequent epidemiological studies, both of the case-control and cohort design, have demonstrated an association between use of psychotropic drugs that interfere with serotonin reuptake and the occurrence of upper gastrointestinal bleeding. In two studies, concurrent use of a nonsteroidal anti-inflammatory drug (NSAID) or aspirin potentiated the risk of bleeding (see DRUG INTERACTIONS). Although these studies focused on upper gastrointestinal bleeding, there is reason to believe that bleeding at other sites may be similarly potentiated. Patients should be cautioned regarding the risk of bleeding associated with the concomitant use of TRADENAME with NSAIDs, aspirin, or other drugs that affect coagulation.

### Hyponatremia

Several cases of hyponatremia and SIADH (syndrome of inappropriate antidiuretic hormone secretion) have been reported in association with citalopram HBr treatment. All patients with these events have recovered with discontinuation of citalopram HBr and/or medical intervention.

### Activation of Mania/Hypomania

In placebo-controlled trials of citalopram HBr, some of which included patients with bipolar disorder, activation of mania/hypomania was reported in 0.2% of 1063 patients treated with citalopram HBr and in none of the 446 patients treated with placebo. Activation of mania/hypomania has also been reported in a small proportion of patients with major affective disorders treated with other marketed antidepressants. As with all antidepressants, TRADENAME should be used cautiously in patients with a history of mania.

### Seizures

Although anticonvulsant effects of citalopram have been observed in animal studies, citalopram HBr has not been systematically evaluated in patients with a seizure disorder. These patients were excluded from clinical studies during the product's premarketing testing. In clinical trials of citalopram HBr, seizures occurred in 0.3% of patients treated with citalopram HBr (a rate of one patient per 98 years of exposure) and 0.5% of patients treated with placebo (a rate of one patient per 50 years of exposure). Like other antidepressants, citalopram HBr should be introduced with care in patients with a history of seizure disorder.

### Interference with Cognitive and Motor Performance

In studies in normal volunteers, citalopram HBr in doses of 40 mg/day did not produce impairment of intellectual function or psychomotor performance. Because any psychoactive drug may impair judgement, thinking, or motor skills, however, patients should be cautioned about operating hazardous machinery, including automobiles, until they are reasonably certain that TRADENAME therapy does not affect their ability to engage in such activities.

### Use in Patients with Concomitant Illness

Clinical experience with TRADENAME in patients with certain concomitant systemic illnesses is limited. Caution is advisable in using TRADENAME in patients with diseases or conditions that produce altered metabolism or hemodynamic responses.

TRADENAME has not been systematically evaluated in patients with a recent history of myocardial infarction or unstable heart disease. Patients with these diagnoses were generally

excluded from clinical studies during the product's premarketing testing. However, the electrocardiograms of 1116 patients who received citalopram HBr in clinical trials were evaluated and the data indicate that citalopram HBr is not associated with the development of clinically significant ECG abnormalities.

In subjects with hepatic impairment, citalopram clearance was decreased and plasma concentrations were increased. The use of TRADENAME in hepatically impaired patients should be approached with caution and a lower maximum dosage is recommended (see Dosage and Administration).

Because citalopram is extensively metabolized, excretion of unchanged drug in urine is a minor route of elimination. Until adequate numbers of patients with severe renal impairment have been evaluated during chronic treatment with TRADENAME, however, it should be used with caution in such patients (see Dosage and Administration).

### **Information for Patients**

Prescribers or other health professionals should inform patients, their families, and their caregivers about the benefits and risks associated with treatment with Citalopram and should counsel them in its appropriate use. A patient Medication Guide About Using Antidepressants in Children and Teenagers is available for Citalopram. The prescriber or health professional should instruct patients, their families, and their caregivers to read the Medication Guide and should assist them in understanding its contents. Patients should be given the opportunity to discuss the contents of the Medication Guide and to obtain answers to any questions they may have. The complete text of the Medication Guide is reprinted at the end of this document.

Patients should be advised of the following issues and asked to alert their prescriber if these occur while taking Citalopram.

Although in controlled studies citalopram HBr has not been shown to impair psychomotor performance, any psychoactive drug may impair judgment, thinking, or motor skills, so patients should be cautioned about operating hazardous machinery, including automobiles, until they are reasonably certain that TRADENAME therapy does not affect their ability to engage in such activities.

Patients should be told that, although citalopram HBr has not been shown in experiments with normal subjects to increase the mental and motor skill impairments caused by alcohol, the concomitant use of TRADENAME and alcohol in depressed patients is not advised.

Patients should be advised to inform their physician if they are taking, or plan to take, any prescription or over-the-counter drugs, as there is a potential for interactions.

Patients should be cautioned about the concomitant use of TRADENAME and NSAIDs, aspirin, or other drugs that affect coagulation since the combined use of psychotropic drugs that interfere with serotonin reuptake and these agents has been associated with an increased risk of bleeding.

Patients should be advised to notify their physician if they become pregnant or intend to become pregnant during therapy.

Patients should be advised to notify their physician if they are breastfeeding an infant.

While patients may notice improvement with TRADENAME therapy in 1 to 4 weeks, they should be advised to continue therapy as directed.

Patients should be instructed not to remove the tablet from the blister until just prior to dosing; once removed, it cannot be stored.

- To open the blister pack, peel back the foil on the blister. Do not push tablet through the foil. Remove the tablet and place it in the mouth, where it will dissolve in seconds and then be swallowed with the saliva.
- TRADENAME may be taken with or without water.
- Do NOT chew, break, or split the tablet.

**Clinical Worsening and Suicide Risk:** Patients, their families, and their caregivers should be encouraged to be alert to the emergence of anxiety, agitation, panic attacks, insomnia, irritability, hostility, aggressiveness, impulsivity, akathisia (psychomotor restlessness), hypomania, mania, other unusual changes in behavior, worsening of depression, and suicidal ideation, especially early during antidepressant treatment and when the dose is adjusted up or down. Families and caregivers of patients should be advised to observe for the emergence of such symptoms on a day-to-day basis, since changes may be abrupt. Such symptoms should be reported to the patient's prescriber or health professional, especially if they are severe, abrupt in onset, or were not part of the patient's presenting symptoms. Symptoms such as these may be associated with an increased risk for suicidal thinking and behavior and indicate a need for very close monitoring and possibly changes in the medication.

### **Laboratory Tests**

There are no specific laboratory tests recommended.

### **Drug Interactions**

**CNS Drugs** - Given the primary CNS effects of citalopram, caution should be used when it is taken in combination with other centrally acting drugs.

**Alcohol** - Although citalopram did not potentiate the cognitive and motor effects of alcohol in a clinical trial, as with other psychotropic medications, the use of alcohol by depressed patients taking TRADENAME is not recommended.

**Monoamine Oxidase Inhibitors (MAOIs)** - See Contraindications and Warnings.

### **Drugs That Interfere With Hemostasis (NSAIDs, Aspirin, Warfarin, etc.)**

Serotonin release by platelets plays an important role in hemostasis. Epidemiological studies of the case-control and cohort design that have demonstrated an association between use of psychotropic drugs that interfere with serotonin reuptake and the occurrence of upper gastrointestinal bleeding have also shown that concurrent use of an NSAID or aspirin potentiated the risk of bleeding. Thus, patients should be cautioned about the use of such drugs concurrently with TRADENAME.

Cimetidine - In subjects who had received 21 days of 40 mg/day citalopram HBr, combined administration of 400 mg/day cimetidine for 8 days resulted in an increase in citalopram AUC and  $C_{max}$  of 43% and 39%, respectively. The clinical significance of these findings is unknown.

Digoxin - In subjects who had received 21 days of 40 mg/day citalopram HBr, combined administration of TRADENAME and digoxin (single dose of 1 mg) did not significantly affect the pharmacokinetics of either citalopram or digoxin.

Lithium - Coadministration of citalopram HBr (40 mg/day for 10 days) and lithium (30 mmol/day for 5 days) had no significant effect on the pharmacokinetics of citalopram or lithium. Nevertheless, plasma lithium levels should be monitored with appropriate adjustment to the lithium dose in accordance with standard clinical practice. Because lithium may enhance the serotonergic effects of citalopram, caution should be exercised when TRADENAME and lithium are coadministered.

Theophylline - Combined administration of citalopram HBr (40 mg/day for 21 days) and the CYP1A2 substrate theophylline (single dose of 300 mg) did not affect the pharmacokinetics of theophylline. The effect of theophylline on the pharmacokinetics of citalopram was not evaluated.

Sumatriptan - There have been rare postmarketing reports describing patients with weakness, hyperreflexia, and incoordination following the use of a selective serotonin reuptake inhibitor (SSRI) and sumatriptan. If concomitant treatment with sumatriptan and an SSRI (e.g., fluoxetine, fluvoxamine, paroxetine, sertraline, citalopram) is clinically warranted, appropriate observation of the patient is advised.

Warfarin - Administration of 40 mg/day citalopram HBr for 21 days did not affect the pharmacokinetics of warfarin, a CYP3A4 substrate. Prothrombin time was increased by 5%, the clinical significance of which is unknown.

Carbamazepine - Combined administration of citalopram HBr (40 mg/day for 14 days) and carbamazepine (titrated to 400 mg/day for 35 days) did not significantly affect the pharmacokinetics of carbamazepine, a CYP3A4 substrate. Although trough citalopram plasma levels were unaffected, given the enzyme-inducing properties of carbamazepine, the possibility that carbamazepine might increase the clearance of citalopram should be considered if the two drugs are coadministered.

Triazolam - Combined administration of citalopram HBr (titrated to 40 mg/day for 28 days) and the CYP3A4 substrate triazolam (single dose of 0.25 mg) did not significantly affect the pharmacokinetics of either citalopram or triazolam.

Ketoconazole - Combined administration of citalopram HBr (40 mg) and ketoconazole (200 mg) decreased the  $C_{max}$  and AUC of ketoconazole by 21% and 10%, respectively, and did not significantly affect the pharmacokinetics of citalopram.

CYP3A4 and 2C19 Inhibitors - *In vitro* studies indicated that CYP3A4 and 2C19 are the primary enzymes involved in the metabolism of citalopram. However, coadministration of citalopram (40 mg) and ketoconazole (200 mg), a potent inhibitor of CYP3A4, did not significantly affect the

pharmacokinetics of citalopram. Because citalopram is metabolized by multiple enzyme systems, inhibition of a single enzyme may not appreciably decrease citalopram clearance.

Metoprolol- Administration of 40 mg/day citalopram HBr for 22 days resulted in a two-fold increase in the plasma levels of the beta- adrenergic blocker metoprolol. Increased metoprolol plasma levels have been associated with decreased cardioselectivity. Coadministration of citalopram HBr and metoprolol had no clinically significant effects on blood pressure or heart rate.

Imipramine and Other Tricyclic Antidepressants (TCAs) - *In vitro* studies suggest that citalopram is a relatively weak inhibitor of CYP2D6. Coadministration of citalopram HBr (40 mg/day for 10 days) with the tricyclic antidepressant imipramine (single dose of 100 mg), a substrate for CYP2D6, did not significantly affect the plasma concentrations of imipramine or citalopram. However, the concentration of the imipramine metabolite desipramine was increased by approximately 50%. The clinical significance of the desipramine change is unknown. Nevertheless, caution is indicated in the coadministration of TCA's with TRADENAME.

Electroconvulsive Therapy (ECT) - There are no clinical studies of the combined use of electroconvulsive therapy (ECT) and TRADENAME.

### **Carcinogenesis, Mutagenesis, Impairment of Fertility**

#### Carcinogenesis

Citalopram was administered in the diet to NMRI/BOM strain mice and COBS WI strain rats for 18 and 24 months, respectively. There was no evidence for carcinogenicity of citalopram in mice receiving up to 240 mg/kg/day, which is equivalent to 20 times the maximum recommended human daily dose (MRHD) of 60 mg on a surface area ( $\text{mg}/\text{m}^2$ ) basis. There was an increased incidence of small intestine carcinoma in rats receiving 8 or 24 mg/kg/day, doses which are approximately 1.3 and 4 times the MRHD, respectively, on a  $\text{mg}/\text{m}^2$  basis. A no-effect dose for this finding was not established. The relevance of these findings to humans is unknown.

#### Mutagenesis

Citalopram was mutagenic in the *in vitro* bacterial reverse mutation assay (Ames test) in 2 of 5 bacterial strains (Salmonella TA98 and TA1537) in the absence of metabolic activation. It was clastogenic in the *in vitro* Chinese hamster lung cell assay for chromosomal aberrations in the presence and absence of metabolic activation. Citalopram was not mutagenic in the *in vitro* mammalian forward gene mutation assay (HPRT) in mouse lymphoma cells or in a coupled *in vitro/in vivo* unscheduled DNA synthesis (CUDS) assay in rat liver. It was not clastogenic in the *in vitro* chromosomal aberration assay in human lymphocytes or in two *in vivo* mouse micronucleus assays.

#### Impairment of Fertility

When citalopram was administered orally to male and female rats prior to and throughout mating and gestation at doses of 16/24 (males/females), 32, 48, and 72 mg/kg/day, mating was decreased at all doses, and fertility was decreased at doses  $\geq 32$  mg/kg/day, approximately 5 times the maximum recommended human dose (MRHD) of 60 mg/day on a body surface area ( $\text{mg}/\text{m}^2$ ) basis. Gestation duration was increased at 48 mg/kg/day, approximately 8 times the MRHD.

## **Pregnancy**

### Pregnancy Category C

In animal reproduction studies, citalopram has been shown to have adverse effects on embryo/fetal and postnatal development, including teratogenic effects, when administered at doses greater than human therapeutic doses.

In two rat embryo/fetal development studies, oral administration of citalopram (32, 56, or 112 mg/kg/day) to pregnant animals during the period of organogenesis resulted in decreased embryo/fetal growth and survival and an increased incidence of fetal abnormalities (including cardiovascular and skeletal defects) at the high dose, which is approximately 18 times the maximum recommended human dose (MRHD) of 60 mg/day on a body surface area (mg/m<sup>2</sup>) basis. This dose was also associated with maternal toxicity (clinical signs, decreased BW gain). The developmental, no-effect dose of 56 mg/kg/day is approximately 9 times the MRHD on a mg/m<sup>2</sup> basis. In a rabbit study, no adverse effects on embryo/fetal development were observed at doses of up to 16 mg/kg/day, or approximately 5 times the MRHD on a mg/m<sup>2</sup> basis. Thus, teratogenic effects were observed at a maternally toxic dose in the rat and were not observed in the rabbit.

When female rats were treated with citalopram (4.8, 12.8, or 32 mg/kg/day) from late gestation through weaning, increased offspring mortality during the first 4 days after birth and persistent offspring growth retardation were observed at the highest dose, which is approximately 5 times the MRHD on a mg/m<sup>2</sup> basis. The no-effect dose of 12.8 mg/kg/day is approximately 2 times the MRHD on a mg/m<sup>2</sup> basis. Similar effects on offspring mortality and growth were seen when dams were treated throughout gestation and early lactation at doses  $\geq$  24 mg/kg/day, approximately 4 times the MRHD on a mg/m<sup>2</sup> basis. A no-effect dose was not determined in that study.

There are no adequate and well-controlled studies in pregnant women; therefore, citalopram should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

### **Pregnancy-Nonteratogenic Effects**

Neonates exposed to citalopram HBr and other SSRIs or SNRIs, late in the third trimester, have developed complications requiring prolonged hospitalization, respiratory support, and tube feeding. Such complications can arise immediately upon delivery. Reported clinical findings have included respiratory distress, cyanosis, apnea, seizures, temperature instability, feeding difficulty, vomiting, hypoglycemia, hypotonia, hypertonia, hyperreflexia, tremor, jitteriness, irritability, and constant crying. These features are consistent with either a direct toxic effect of SSRIs and SNRIs or, possibly, a drug discontinuation syndrome. It should be noted that, in some cases, the clinical picture is consistent with serotonin syndrome (see WARNINGS).

When treating a pregnant woman with citalopram HBr during the third trimester, the physician should carefully consider the potential risks and benefits of treatment (see DOSAGE AND ADMINISTRATION).

## **Labor and Delivery**

The effect of TRADENAME on labor and delivery in humans is unknown.

## **Nursing Mothers**

As has been found to occur with many other drugs, citalopram is excreted in human breast milk. There have been two reports of infants experiencing excessive somnolence, decreased feeding, and weight loss in association with breastfeeding from a citalopram-treated mother; in one case, the infant was reported to recover completely upon discontinuation of citalopram by its mother and in the second case, no follow up information was available. The decision whether to continue or discontinue either nursing or TRADENAME therapy should take into account the risks of citalopram exposure for the infant and the benefits of TRADENAME treatment for the mother.

## **Pediatric Use**

Safety and effectiveness in pediatric patients have not been established. (see BOX WARNING and WARNINGS—Clinical Worsening and Suicide Risk). Two placebo-controlled trials in 407 pediatric patients with MDD have been conducted with citalopram and the data were not sufficient to support a claim for use in pediatric patients. Anyone considering the use of TRADENAME in a child or adolescent must balance the potential risks with the clinical need.

## **Geriatric Use**

Of 4422 patients in clinical studies of citalopram HBr, 1357 were 60 and over, 1034 were 65 and over, and 457 were 75 and over. No overall differences in safety or effectiveness were observed between these subjects and younger subjects, and other reported clinical experience has not identified differences in responses between the elderly and younger patients, but greater sensitivity of some older individuals cannot be ruled out. Most elderly patients treated with citalopram HBr in clinical trials received daily doses between 20 and 40 mg (see Dosage and Administration).

In two pharmacokinetic studies, citalopram AUC was increased by 23% and 30%, respectively, in elderly subjects as compared to younger subjects, and its half-life was increased by 30% and 50%, respectively (see Clinical Pharmacology).

20 mg/day is the recommended dose for most elderly patients (see Dosage and Administration).

## **ADVERSE REACTIONS**

The premarketing development program for citalopram HBr included citalopram exposures in patients and/or normal subjects from 3 different groups of studies: 429 normal subjects in clinical pharmacology/pharmacokinetic studies; 4422 exposures from patients in controlled and uncontrolled clinical trials, corresponding to approximately 1370 patient-exposure years. There were, in addition, over 19,000 exposures from mostly open-label, European postmarketing studies. The conditions and duration of treatment with citalopram HBr varied greatly and included (in overlapping categories) open-label and double-blind studies, inpatient and outpatient studies, fixed-dose and dose-titration studies, and short-term and long-term exposure. Adverse reactions were assessed by collecting adverse events, results of physical examinations, vital signs, weights, laboratory analyses, ECGs, and results of ophthalmologic examinations.

Adverse events during exposure were obtained primarily by general inquiry and recorded by clinical investigators using terminology of their own choosing. Consequently, it is not possible to

provide a meaningful estimate of the proportion of individuals experiencing adverse events without first grouping similar types of events into a smaller number of standardized event categories. In the tables and tabulations that follow, standard World Health Organization (WHO) terminology has been used to classify reported adverse events.

The stated frequencies of adverse events represent the proportion of individuals who experienced, at least once, a treatment-emergent adverse event of the type listed. An event was considered treatment-emergent if it occurred for the first time or worsened while receiving therapy following baseline evaluation.

### **Adverse Findings Observed in Short-Term, Placebo-Controlled Trials**

#### **Adverse Events Associated with Discontinuation of Treatment**

Among 1063 depressed patients who received citalopram HBr at doses ranging from 10 to 80 mg/day in placebo-controlled trials of up to 6 weeks in duration, 16% discontinued treatment due to an adverse event, as compared to 8% of 446 patients receiving placebo. The adverse events associated with discontinuation and considered drug-related (i.e., associated with discontinuation in at least 1% of citalopram HBr-treated patients at a rate at least twice that of placebo) are shown in TABLE 1. It should be noted that one patient can report more than one reason for discontinuation and be counted more than once in this table.

**TABLE 1**  
**Adverse Events Associated with Discontinuation of Treatment in Short-Term, Placebo-Controlled, Depression Trials**

	<b>Percentage of Patients Discontinuing Due to Adverse Event</b>	
<b><u>Body System/Adverse Event</u></b>	<b><u>Citalopram</u> (N=1063)</b>	<b><u>Placebo</u> (N=446)</b>
<b>General</b>		
Asthenia	1 %	<1 %
<b>Gastrointestinal Disorders</b>		
Nausea	4%	0%
Dry Mouth	1 %	<1 %
Vomiting	1 %	0%
<b>Central and Peripheral Nervous System Disorders</b>		
Dizziness	2%	<1%
<b>Psychiatric Disorders</b>		
Insomnia	3%	1 %
Somnolence	2%	1 %
Agitation	1%	<1%

#### **Adverse Events Occurring at an Incidence of 2% or More Among Citalopram HBr-Treated Patients**

Table 2 enumerates the incidence, rounded to the nearest percent, of treatment-emergent adverse events that occurred among 1063 depressed patients who received citalopram HBr at doses ranging from 10 to 80 mg/day in placebo-controlled trials of up to 6 weeks in duration. Events included are those occurring in 2% or more of patients treated with citalopram HBr and for which the incidence in patients treated with citalopram HBr was greater than the incidence in placebo-treated patients.

The prescriber should be aware that these figures cannot be used to predict the incidence of adverse events in the course of usual medical practice where patient characteristics and other factors differ from those which prevailed in the clinical trials. Similarly, the cited frequencies cannot be compared with figures obtained from other clinical investigations involving different treatments, uses, and investigators. The cited figures, however, do provide the prescribing physician with some basis for estimating the relative contribution of drug and non-drug factors to the adverse event incidence rate in the population studied.

The only commonly observed adverse event that occurred in citalopram HBr patients with an incidence of 5% or greater and at least twice the incidence in placebo patients was ejaculation disorder (primarily ejaculatory delay) in male patients (see TABLE 2).

**TABLE 2**  
**Treatment-Emergent Adverse Events:**  
**Incidence in Placebo-Controlled Clinical Trials\***

<b><u>Body System/Adverse Event</u></b>	<b>(Percentage of Patients Reporting Event)</b>	
	<b>citalopram HBr (N=1063)</b>	<b>Placebo (N=446)</b>
<b>Autonomic Nervous System Disorders</b>		
Dry Mouth	20%	14%
Sweating Increased	11 %	9%
<b>Central &amp; Peripheral Nervous System Disorders</b>		
Tremor	8%	6%
<b>Gastrointestinal Disorders</b>		
Nausea	21%	14%
Diarrhea	8%	5%
Dyspepsia	5%	4%
Vomiting	4%	3%
Abdominal Pain	3%	2%
<b>General</b>		
Fatigue	5%	3%
Fever	2%	<1%
<b>Musculoskeletal System Disorders</b>		
Arthralgia	2%	1%
Myalgia	2%	1%
<b>Psychiatric Disorders</b>		
Somnolence	18%	10%
Insomnia	15%	14%
Anxiety	4%	3%
Anorexia	4%	2%
Agitation	3%	1%
Dysmenorrhea <sup>1</sup>	3%	2%
Libido Decreased	2%	<1%
Yawning	2%	<1%
<b>Respiratory System Disorders</b>		

Upper Respiratory Tract Infection	5%	3%
Rhinitis	5%	3%
Sinusitis	3%	<1%
<b>Urogenital</b>		
Ejaculation Disorder <sup>2,3</sup>	6%	1%
Impotence <sup>3</sup>	3%	<1%

\* Events reported by at least 2% of patients treated with citalopram HBr are reported, except for the following events which had an incidence on placebo  $\geq$  citalopram HBr: headache, asthenia, dizziness, constipation, palpitation, vision abnormal, sleep disorder, nervousness, pharyngitis, micturition disorder, back pain.

<sup>1</sup> Denominator used was for females only (N=638; N=252 placebo).

<sup>2</sup> Primary ejaculatory delay.

<sup>3</sup> Denominator used was for males only (N=425 citalopram HBr, N=194 placebo).

### Dose Dependency of Adverse Events

The potential relationship between the dose of citalopram HBr administered and the incidence of adverse events was examined in a fixed-dose study in depressed patients receiving placebo or citalopram HBr 10, 20, 40, and 60 mg. Jonckheere's trend test revealed a positive dose response ( $p < 0.05$ ) for the following adverse events: fatigue, impotence, insomnia, sweating increased, somnolence, and yawning.

### Male and Female Sexual Dysfunction with SSRIs

Although changes in sexual desire, sexual performance, and sexual satisfaction often occur as manifestations of a psychiatric disorder, they may also be a consequence of pharmacologic treatment. In particular, some evidence suggests that selective serotonin reuptake inhibitors (SSRIs) can cause such untoward sexual experiences.

Reliable estimates of the incidence and severity of untoward experiences involving sexual desire, performance, and satisfaction are difficult to obtain, however, in part because patients and physicians may be reluctant to discuss them. Accordingly, estimates of the incidence of untoward sexual experience and performance cited in product labeling, are likely to underestimate their actual incidence.

The table below displays the incidence of sexual side effects reported by at least 2% of patients taking citalopram HBr in a pool of placebo-controlled clinical trials in patients with depression.

<u>Treatment</u>	<u>citalopram HBr</u> (425 males)	<u>Placebo</u> (194 males)
Abnormal Ejaculation (mostly ejaculatory delay)	6.1 % (males only)	1 % (males only)
Libido Decreased	3.8% (males only)	<1 % (males only)
Impotence	2.8% (males only)	<1% (males only)

In female depressed patients receiving citalopram HBr, the reported incidence of decreased libido and anorgasmia was 1.3% (n=638 females) and 1.1% (n=252 females), respectively.

There are no adequately designed studies examining sexual dysfunction with citalopram treatment. Priapism has been reported with all SSRIs.

While it is difficult to know the precise risk of sexual dysfunction associated with the use of SSRIs, physicians should routinely inquire about such possible side effects.

#### Vital Sign Changes

Citalopram HBr and placebo groups were compared with respect to (1) mean change from baseline in vital signs (pulse, systolic blood pressure, and diastolic blood pressure) and (2) the incidence of patients meeting criteria for potentially clinically significant changes from baseline in these variables. These analyses did not reveal any clinically important changes in vital signs associated with citalopram HBr treatment. In addition, a comparison of supine and standing vital sign measures for citalopram HBr and placebo treatments indicated that citalopram HBr treatment is not associated with orthostatic changes.

#### Weight Changes

Patients treated with citalopram HBr in controlled trials experienced a weight loss of about 0.5 kg compared to no change for placebo patients.

#### Laboratory Changes

Citalopram HBr and placebo groups were compared with respect to (1) mean change from baseline in various serum chemistry, hematology, and urinalysis variables, and (2) the incidence of patients meeting criteria for potentially clinically significant changes from baseline in these variables. These analyses revealed no clinically important changes in laboratory test parameters associated with citalopram HBr treatment.

#### ECG Changes

Electrocardiograms from citalopram HBr (N=802) and placebo (N=241) groups were compared with respect to (1) mean change from baseline in various ECG parameters, and (2) the incidence of patients meeting criteria for potentially clinically significant changes from baseline in these variables. The only statistically significant drug-placebo difference observed was a decrease in heart rate for citalopram HBr of 1.7 bpm compared to no change in heart rate for placebo. There were no observed differences in QT or other ECG intervals.

#### **Other Events Observed During the Premarketing Evaluation of Citalopram HBr**

Following is a list of WHO terms that reflect treatment-emergent adverse events, as defined in the introduction to the ADVERSE REACTIONS section, reported by patients treated with citalopram HBr at multiple doses in a range of 10 to 80 mg/day during any phase of a trial within the premarketing database of 4422 patients. All reported events are included except those already listed in Table 2 or elsewhere in labeling, those events for which a drug cause was remote, those event terms which were so general as to be uninformative, and those occurring in only one patient. It is important to emphasize that, although the events reported occurred during treatment with citalopram HBr, they were not necessarily caused by it.

Events are further categorized by body system and listed in order of decreasing frequency according to the following definitions: frequent adverse events are those occurring on one or more occasions in at least 1/100 patients; infrequent adverse events are those occurring in less than 1/100 patients but at least 1/1000 patients; rare events are those occurring in fewer than 1/1000 patients.

**Cardiovascular** - *Frequent*: tachycardia, postural hypotension, hypotension. *Infrequent*: hypertension, bradycardia, edema (extremities), angina pectoris, extrasystoles, cardiac failure, flushing, myocardial infarction, cerebrovascular accident, myocardial ischemia. *Rare*: transient ischemic attack, phlebitis, atrial fibrillation, cardiac arrest, bundle branch block.

**Central and Peripheral Nervous System Disorders** - *Frequent*: paresthesia, migraine. *Infrequent*: hyperkinesia, vertigo, hypertonia, extrapyramidal disorder, leg cramps, involuntary muscle contractions, hypokinesia, neuralgia, dystonia, abnormal gait, hypesthesia, ataxia. *Rare*: abnormal coordination, hyperesthesia, ptosis, stupor.

**Endocrine Disorders** - *Rare*: hypothyroidism, goiter, gynecomastia.

**Gastrointestinal Disorders** - *Frequent*: saliva increased, flatulence. *Infrequent*: gastritis, gastroenteritis, stomatitis, eructation, hemorrhoids, dysphagia, teeth grinding, gingivitis, esophagitis. *Rare*: colitis, gastric ulcer, cholecystitis, cholelithiasis, duodenal ulcer, gastroesophageal reflux, glossitis, jaundice, diverticulitis, rectal hemorrhage, hiccups.

**General** - *Infrequent*: hot flushes, rigors, alcohol intolerance, syncope, influenza-like symptoms. *Rare*: hayfever.

**Hemic and Lymphatic Disorders** - *Infrequent*: purpura, anemia, epistaxis, leukocytosis, leucopenia, lymphadenopathy. *Rare*: pulmonary embolism, granulocytopenia, lymphocytosis, lymphopenia, hypochromic anemia, coagulation disorder, gingival bleeding.

**Metabolic and Nutritional Disorders** - *Frequent*: decreased weight, increased weight. *Infrequent*: increased hepatic enzymes, thirst, dry eyes, increased alkaline phosphatase, abnormal glucose tolerance. *Rare*: bilirubinemia, hypokalemia, obesity, hypoglycemia, hepatitis, dehydration.

**Musculoskeletal System Disorders** - *Infrequent*: arthritis, muscle weakness, skeletal pain. *Rare*: bursitis, osteoporosis.

**Psychiatric Disorders** - *Frequent*: impaired concentration, amnesia, apathy, depression, increased appetite, aggravated depression, suicide attempt, confusion. *Infrequent*: increased libido, aggressive reaction, paroniria, drug dependence, depersonalization, hallucination, euphoria, psychotic depression, delusion, paranoid reaction, emotional lability, panic reaction, psychosis. *Rare*: catatonic reaction, melancholia.

**Reproductive Disorders/Female\*** - *Frequent*: amenorrhea. *Infrequent*: galactorrhea, breast pain, breast enlargement, vaginal hemorrhage.

\*% based on female subjects only: 2955

**Respiratory System Disorders** - *Frequent*: coughing. *Infrequent*: bronchitis, dyspnea, pneumonia. *Rare*: asthma, laryngitis, bronchospasm, pneumonitis, sputum increased.

**Skin and Appendages Disorders** - *Frequent*: rash, pruritus. *Infrequent*: photosensitivity reaction, urticaria, acne, skin discoloration, eczema, alopecia, dermatitis, skin dry, psoriasis. *Rare*: hypertrichosis, decreased sweating, melanosis, keratitis, cellulitis, pruritus ani.

**Special Senses** - *Frequent*: accommodation abnormal, taste perversion. *Infrequent*: tinnitus, conjunctivitis, eye pain. *Rare*: mydriasis, photophobia, diplopia, abnormal lacrimation, cataract, taste loss.

**Urinary System Disorders** - *Frequent*: polyuria. *Infrequent*: micturition frequency, urinary incontinence, urinary retention, dysuria. *Rare*: facial edema, hematuria, oliguria, pyelonephritis, renal calculus, renal pain.

**Other Events Observed During Postmarketing Evaluation** - It is estimated that over 30 million patients have been treated with citalopram HBr since market introduction. Although no causal relationship to citalopram HBr treatment has been found, the following adverse events have been reported to be temporally associated with citalopram HBr treatment, and have not been described elsewhere in labeling: acute renal failure, akathisia, allergic reaction, anaphylaxis, angioedema, choreoathetosis, chest pain, delirium, dyskinesia, ecchymosis, epidermal necrolysis, erythema multiforme, gastrointestinal hemorrhage, grand mal convulsions, hemolytic anemia, hepatic necrosis, myoclonus, neuroleptic malignant syndrome, nystagmus, pancreatitis, priapism, prolactinemia, prothrombin decreased, QT prolonged, rhabdomyolysis, serotonin syndrome, spontaneous abortion, thrombocytopenia, thrombosis, ventricular arrhythmia, Torsades de pointes, and withdrawal syndrome.

## **DRUG ABUSE AND DEPENDENCE**

### **Controlled Substance Class**

TRADENAME is not a controlled substance.

### **Physical and Psychological Dependence**

Animal studies suggest that the abuse liability of citalopram HBr is low. Citalopram HBr has not been systematically studied in humans for its potential for abuse, tolerance, or physical dependence. The premarketing clinical experience with citalopram HBr did not reveal any drug-seeking behavior. However, these observations were not systematic and it is not possible to predict, on the basis of this limited experience, the extent to which a CNS-active drug will be misused, diverted, and/or abused once marketed. Consequently, physicians should carefully evaluate TRADENAME patients for history of drug abuse and follow such patients closely, observing them for signs of misuse or abuse (e.g., development of tolerance, incrementations of dose, drug-seeking behavior).

## **OVERDOSAGE**

### **Human Experience**

Although there were no reports of fatal citalopram overdose in clinical trials involving overdoses of up to 2000 mg, postmarketing reports of drug overdoses involving citalopram have included 12 fatalities, 10 in combination with other drugs and/or alcohol and 2 with citalopram alone (3920 mg and 2800 mg), as well as non-fatal overdoses of up to 6000 mg. Symptoms most often accompanying citalopram overdose, alone or in combination with other drugs and/or alcohol, included dizziness, sweating, nausea, vomiting, tremor, somnolence, and sinus tachycardia. In more rare cases, observed symptoms included amnesia, confusion, coma, convulsions, hyperventilation, cyanosis, rhabdomyolysis, and ECG changes (including QTc prolongation, nodal rhythm, ventricular arrhythmia, and one possible case of Torsades de pointes). There has

been a case of acute renal failure and adult respiratory distress syndrome after an overdose of 3000mg of citalopram.

### **Management of Overdose**

Establish and maintain an airway to ensure adequate ventilation and oxygenation. Gastric evacuation by lavage and use of activated charcoal should be considered. Careful observation and cardiac and vital sign monitoring are recommended, along with general symptomatic and supportive care. Due to the large volume of distribution of citalopram, forced diuresis, dialysis, hemoperfusion, and exchange transfusion are unlikely to be of benefit. There are no specific antidotes for TRADENAME.

In managing overdosage, consider the possibility of multiple-drug involvement. The physician should consider contacting a poison control center for additional information on the treatment of any overdose.

## **DOSAGE AND ADMINISTRATION**

### **Initial Treatment**

TRADENAME (citalopram HBr) should be administered at an initial dose of 20 mg once daily, generally with an increase to a dose of 40 mg/day. Dose increases should usually occur in increments of 20 mg at intervals of no less than one week. Although certain patients may require a dose of 60 mg/day, the only study pertinent to dose response for effectiveness did not demonstrate an advantage for the 60 mg/day dose over the 40 mg/day dose; doses above 40 mg are therefore not ordinarily recommended.

Place TRADENAME tablet in the mouth where it disintegrates in seconds and can then be swallowed. The tablet may be taken with or without water. Do NOT chew, break, or split the tablet.

TRADENAME should be administered once daily, in the morning or evening, with or without food.

### **Special Populations**

20 mg/day is the recommended dose for most elderly patients and patients with hepatic impairment, with titration to 40 mg/day only for nonresponding patients.

No dosage adjustment is necessary for patients with mild or moderate renal impairment.

TRADENAME should be used with caution in patients with severe renal impairment.

### **Treatment of Pregnant Women During the Third Trimester**

Neonates exposed to citalopram HBr and other SSRIs or SNRIs, late in the third trimester, have developed complications requiring prolonged hospitalization, respiratory support, and tube feeding (see PRECAUTIONS). When treating pregnant women with TRADENAME during the third trimester, the physician should carefully consider the potential risks and benefits of treatment. The physician may consider tapering TRADENAME in the third trimester.



## **ANIMAL TOXICOLOGY**

### **Retinal Changes in Rats**

Pathologic changes (degeneration/atrophy) were observed in the retinas of albino rats in the 2-year carcinogenicity study with citalopram. There was an increase in both incidence and severity of retinal pathology in both male and female rats receiving 80 mg/kg/day (13 times the maximum recommended daily human dose of 60 mg on a mg/m<sup>2</sup> basis). Similar findings were not present in rats receiving 24 mg/kg/day for two years, in mice treated for 18 months at doses up to 240 mg/kg/day, or in dogs treated for one year at doses up to 20 mg/kg/day (4, 20, and 10 times, respectively, the maximum recommended daily human dose on a mg/m<sup>2</sup> basis).

Additional studies to investigate the mechanism for this pathology have not been performed, and the potential significance of this effect in humans has not been established.

### **Cardiovascular Changes in Dogs**

In a one-year toxicology study, 5 of 10 beagle dogs receiving oral doses of 8 mg/kg/day (4 times the maximum recommended daily human dose of 60 mg on a mg/m<sup>2</sup> basis) died suddenly between weeks 17 and 31 following initiation of treatment. Although appropriate data from that study are not available to directly compare plasma levels of citalopram (CT) and its metabolites, demethylcitalopram (DCT) and didemethylcitalopram (DDCT), to levels that have been achieved in humans, pharmacokinetic data indicate that the relative dog-to-human exposure was greater for the metabolites than for citalopram. Sudden deaths were not observed in rats at doses up to 120 mg/kg/day, which produced plasma levels of CT, DCT, and DDCT similar to those observed in dogs at doses of 8 mg/kg/day. A subsequent intravenous dosing study demonstrated that in beagle dogs, DDCT caused QT prolongation, a known risk factor for the observed outcome in dogs. This effect occurred in dogs at doses producing peak DDCT plasma levels of 810 to 3250 nM (39-155 times the mean steady state DDCT plasma level measured at the maximum recommended human daily dose of 60 mg). In dogs, peak DDCT plasma concentrations are approximately equal to peak CT plasma concentrations, whereas in humans, steady state DDCT plasma concentrations are less than 10% of steady state CT plasma concentrations. Assays of DDCT plasma concentrations in 2020 citalopram-treated individuals demonstrated that DDCT levels rarely exceeded 70 nM; the highest measured level of DDCT in human overdose was 138 nM. While DDCT is ordinarily present in humans at lower levels than in dogs, it is unknown whether there are individuals who may achieve higher DDCT levels. The possibility that DCT, a principal metabolite in humans, may prolong the QT interval in the dog has not been directly examined because DCT is rapidly converted to DDCT in that species.

## MEDICATION GUIDE

### TRADENAME™(Citalopram HBr) Orally Disintegrating Tablets

Read the Medication Guide that comes with TRADENAME™ before you start taking it and each time you get a prescription. There may be new information. This information does not take the place of talking with your doctor about your medical condition or your treatment.

#### About Using Antidepressants in Children and Teenagers

#### **What is the most important information I should know if my child is being prescribed an antidepressant?**

Parents or guardians need to think about 4 important things when their child is prescribed an antidepressant:

1. There is a risk of suicidal thoughts or actions
2. How to try to prevent suicidal thoughts or actions in your child
3. You should watch for certain signs if your child is taking an antidepressant
4. There are benefits and risks when using antidepressants

#### **1. There is a Risk of Suicidal Thoughts or Actions**

Children and teenagers sometimes think about suicide, and many report trying to kill themselves.

Antidepressants increase suicidal thoughts and actions in some children and teenagers. But suicidal thoughts and actions can also be caused by depression, a serious medical condition that is commonly treated with antidepressants. Thinking about killing yourself or trying to kill yourself is called *suicidality* or *being suicidal*.

A large study combined the results of 24 different studies of children and teenagers with depression or other illnesses. In these studies, patients took either a placebo (sugar pill) or an antidepressant for 1 to 4 months. **No one committed suicide in these studies**, but some patients became suicidal. On sugar pills, 2 out of every 100 became suicidal. On the antidepressants, 4 out of every 100 patients became suicidal.

**For some children and teenagers, the risks of suicidal actions may be especially high.** These include patients with

- Bipolar illness (sometimes called manic-depressive illness)
- A family history of bipolar illness
- A personal or family history of attempting suicide

If any of these are present, make sure you tell your healthcare provider before your child takes an antidepressant.

#### **2. How to Try to Prevent Suicidal Thoughts and Actions**

To try to prevent suicidal thoughts and actions in your child, pay close attention to changes in her or his moods or actions, especially if the changes occur suddenly. Other important people in your child's life can help by paying attention as well (e.g., your child, brothers and sisters, teachers, and other important people). The changes to look out for are listed in Section 3, on what to watch for.

Whenever an antidepressant is started or its dose is changed, pay close attention to your child.

After starting an antidepressant, your child should generally see his or her healthcare provider:

- Once a week for the first 4 weeks
- Every 2 weeks for the next 4 weeks
- After taking the antidepressant for 12 weeks

- After 12 weeks, follow your healthcare provider's advice about how often to come back
- More often if problems or questions arise (see Section 3)

You should call your child's healthcare provider between visits if needed.

### **3. You Should Watch for Certain Signs If Your Child is Taking an Antidepressant**

Contact your child's healthcare provider **right away** if your child exhibits any of the following signs for the first time, or if they seem worse, or worry you, your child, or your child's teacher:

- Thoughts about suicide or dying
- Attempts to commit suicide
- New or worse depression
- New or worse anxiety
- Feeling very agitated or restless
- Panic attacks
- Difficulty sleeping (insomnia)
- New or worse irritability
- Acting aggressive, being angry, or violent
- Acting on dangerous impulses
- An extreme increase in activity and talking
- Other unusual changes in behavior or mood

Never let your child stop taking an antidepressant without first talking to his or her healthcare provider. Stopping an antidepressant suddenly can cause other symptoms.

### **4. There are Benefits and Risks When Using Antidepressants**

Antidepressants are used to treat depression and other illnesses. Depression and other illnesses can lead to suicide. In some children and teenagers, treatment with an antidepressant increases suicidal thinking or actions. It is important to discuss all the risks of treating depression and also the risks of not treating it. You and your child should discuss all treatment choices with your healthcare provider, not just the use of antidepressants.

Other side effects can occur with antidepressants (see section below).

Of all the antidepressants, only fluoxetine (Prozac<sup>TM</sup>) has been FDA approved to treat pediatric depression.

For obsessive compulsive disorder in children and teenagers, FDA has approved only fluoxetine (Prozac<sup>TM</sup>), sertraline (Zoloft<sup>TM</sup>), fluvoxamine, and clomipramine (Anafranil<sup>TM</sup>).

Your healthcare provider may suggest other antidepressants based on the past experience of your child or other family members.

#### **Is this all I need to know if my child is being prescribed an antidepressant?**

No. This is a warning about the risk for suicidality. Other side effects can occur with antidepressants. Be sure to ask your healthcare provider to explain all the side effects of the particular drug he or she is prescribing. Also ask about drugs to avoid when taking an antidepressant. Ask your healthcare provider or pharmacist where to find more information.

\*Prozac<sup>®</sup> is a registered trademark of Eli Lilly and Company

\*Zoloft<sup>®</sup> is a registered trademark of Pfizer Pharmaceuticals

\*Anafranil<sup>®</sup> is a registered trademark of Mallinckrodt Inc.

This Medication Guide has been approved by the U.S. Food and Drug Administration for all antidepressants.