SWLA BEHAVIORAL HEALTH

MIRTAZAPINE (REMERON)

FOR PATIENTS AND FAMILIES

Mirtazapine (Remeron) is an antidepressant for treatment of many types of depressive disorders. It is also effective in treating anxiety disorders, including panic disorder. Patients with depression and anxiety usually respond well to mirtazapine. It has been suggested that mirtazapine's onset of action may be more rapid than that of other antidepressants, including selective serotonin reuptake inhibitors (SSRIs), such as fluoxetine (Prozac). Furthermore, mirtazapine's action may complement the action of other antidepressants, so that it may be used to augment the antidepressant effect of another antidepressant.

It is hypothesized that diminished levels of one or more neurotransmitters in the brain may be the cause of depression. Mirtazapine's antidepressant effect may be related to its action in increasing the levels of neurotransmitters. As more neurotransmitters are made available, the brain undergoes changes that ultimately relieve depression. The lag time for the brain to normalize explains why antidepressants, including mirtazapine, may take weeks before their full effects are achieved.

Mirtazapine is available in tablet form as the brand **Remeron,** and generically as well, in strengths of 15, 30, and 45 mg. It is also available in rapidly dissolving tablets (**Remeron Sol Tab**) in the same strengths. Remeron Sol Tabs dissolve in the mouth and eliminate the need to swallow a pill.

HOW MIRTAZAPINE IS PRESCRIBED

The recommended starting dose of mirtazapine is 15 mg administered in a single dose, preferably prior to bedtime. Some physicians may use a higher starting dosage of 30 mg/day because there appears to be less sedation at the higher dose. This paradox may be due to the difference in mirtazapine's activity at lower doses than at higher doses. If response is not achieved after 1–2 weeks, the dosage may be increased by 15 mg/day until a maximum dosage of 45 mg/day is reached.

PROPER USE OF YOUR MEDICATION

Storing Your Medication

- Keep your medication in a tamper-resistant vial and out of reach of children.
- Store your medication so as to keep it from excessive heat, moisture, and direct light.
- Keep your medication in its original prescription vial with the label intact to prevent others from taking the medication inadvertently.

Taking Your Medication

- Take your medication as instructed by your physician. Do not abruptly stop taking your medication without telling your physician. Discontinuation of your medication may result in relapse. Mirtazapine, like all antidepressants, may take several weeks to achieve its full effect.

- If you miss a dose, take it as soon as possible. However, if it is close to your next dose, skip it and go back to your regular dosing schedule, but do not double-up the dose.
- Your antidepressant may be taken with or without food. If it upsets your stomach, take it at mealtime.

Use of Alcohol and Other Medications

Individuals should refrain from using alcohol while taking antidepressants. Alcohol is a depressant and may oppose the intended action of the antidepressant medication.

Certain medications, including over-the-counter medicines, may interact with mirtazapine. The drug interaction may *lower* the blood level of the affected drug and decrease the drug's effectiveness; or, it may *elevate* the blood level of the affected drug and cause toxicity. When certain drugs are combined with mirtazapine, they may make some side effects worse. Inform your physician of all the prescription and over-the-counter medications you are taking.

Patients taking mirtazapine should *never* take a type of antidepressants known as **monoamine oxidase inhibitors** (MAOIs), such as **phenelzine** (Nardil), **tranylcypromine** (Parnate), and **isocarboxazid** (Marplan). The combination of mirtazapine and MAOI may produce a severe reaction, resulting in high blood pressure, fever, and possible seizures.

POSSIBLE SIDE EFFECTS

- *Drowsiness and sedation*. Drowsiness and sedation are common side effects from mirtazapine. For this reason, the medication is best taken at bedtime to minimize daytime sedation.
- *Gastrointestinal side effects.* Dry mouth is a frequent complaint, but constipation appears to be less frequent.
- *Increased appetite and weight gain.* In the first 6 weeks, mirtazapine may enhance appetite for some patients, which may result in weight gain. For patients whose depressive symptoms include poor appetite and weight loss, this effect may be beneficial. For others, weight gain may be problematic. If a strategy of decreasing caloric intake and increasing exercise does not control the weight, the physician may switch the patient to another antidepressant that is weight-neutral.
- *Increased cholesterol and triglycerides*. In clinical trials, about 15% of patients treated with mirtazapine had significant increase in their cholesterol, and about 6% of patients experienced an increase in triglycerides. It may be necessary to switch the patient to another antidepressant if levels of cholesterol and triglycerides are significantly elevated. If discontinuing mirtazapine is not a viable option, the patient may benefit from a lipid-lowering agent like atorvastatin (Lipitor) to reduce the cardiovascular risks of elevated levels of cholesterol and triglycerides.
- *Orthostatic hypotension*. Low blood pressure due to a postural change is known as **orthostatic hypotension**. Mirtazapine may oppose the body's ability to elevate blood pressure when there is a change in position. If the blood pressure cannot elevate in time to compensate for the change in position as the individual rises from a lying or sitting position, orthostatic hypotension ensues. As a result, the individual feels light-headed and dizzy, has a rapid heart rate, and may faint and fall. By learning to rise slowly to allow the blood pressure to adjust, the patient may avoid or minimize orthostatic hypotension. Mirtazapine-induced orthostatic hypotension is usually mild, but elderly patients and patients who are taking larger doses may be more susceptible to this side effect.
- *Dizziness.* Up to 7% of patients taking mirtazapine report symptoms of dizziness. In some of these cases, the dizziness may be caused by orthostatic hypotension.
- *Elevation of liver enzymes.* In clinical trials, approximately 2% of patients taking mirtazapine were found to have elevation of a particular liver enzyme (alanine transaminase, or ALT). Elevation of liver enzymes is generally indicative of compromised liver function. The majority of these patients did not develop any liver problems when mirtazapine was discontinued, and in other cases the enzyme levels returned to normal despite continued treatment.

Warning: Mirtazapine may cause drowsiness and dizziness. Patients must exercise caution when engaging in daily activities that require mental alertness, such as operating a motor vehicle. It is recommended that patients do not engage in hazardous tasks until they are reasonably certain that their medication does not adversely affect their performance or impair their judgment.

POSSIBLE ADVERSE REACTIONS

- *Seizures.* Mirtazapine, like other antidepressants, may lower the seizure threshold and increase the risk of seizures in susceptible individuals. The risk may be further enhanced when mirtazapine is combined with other medicines that may also lower the seizure threshold. Patients with a history of seizure disorder should be monitored closely while taking mirtazapine, albeit seizures are rare.
- *Agranulocytosis*. Granulocytes, a type of white blood cell in the body's immune system, are important for fighting infections. When these cells are significantly decreased (**agranulocytosis**), the immune system is compromised and the individual may be susceptible to life-threatening infections.

  During clinical trials, two patients treated with mirtazapine developed agranulocytosis with signs and symptoms of infections. A third patient developed low granulocytes without signs of infection. In all three cases, there were no serious consequences when the antidepressant was discontinued. Although mirtazapine-induced agranulocytosis is extremely rare, the patient should notify the physician if he or she develops a persistent sore throat, fever, or other lingering signs of infection while taking mirtazapine.
- *Mania and hypomania.* In patients with bipolar disorder, when treating the depressive phase of the illness with antidepressants, there is a risk that the medication may precipitate mania or hypomania (less severe form of mania). Although the incidence of triggering mania or hypomania is rare during treatment with mirtazapine, individuals with a history of bipolar illness should be aware of this potential reaction.

PREGNANCY AND BREAST FEEDING

Mirtazapine is in **Category C** of the U.S. Food and Drug Administration (FDA) Pregnancy Risk Categories. It is given this classification because there are no clinical studies in women, nor is there adequate information, to determine the risk of this drug during pregnancy. Animal studies have found some abnormalities in the fetus during maternal exposure to mirtazapine. However, interpretation of animal studies in regard to human risks is unclear. The risk of mirtazapine to the fetus cannot be ruled out, and the antidepressant should be prescribed during pregnancy only if the benefits outweigh the potential risk.

It is not known if mirtazapine is excreted in breast milk. Women taking mirtazapine should not breastfeed.

If you have any questions about this handout, please consult your physician.