

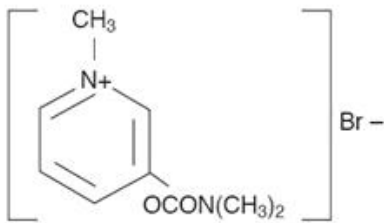
**PYRIDOSTIGMINE BROMIDE- pyridostigmine bromide tablet  
Zydus Pharmaceuticals (USA) Inc.**

-----  
**Pyridostigmine Bromide Tablets, USP**

**Rx only**

**DESCRIPTION**

Pyridostigmine bromide tablets, USP are an orally active cholinesterase inhibitor. Chemically, pyridostigmine bromide is 3-hydroxy-1-methylpyridinium bromide dimethylcarbamate. Its structural formula is:



Pyridostigmine bromide, USP is a white or almost white crystalline, deliquescent powder. It is very soluble in water and in alcohol, slightly soluble in hexane, practically insoluble in ether.

Each pyridostigmine bromide tablet, USP intended for oral administration contains 60 mg of pyridostigmine bromide, USP. In addition, each tablet contains the following inactive ingredients: anhydrous lactose, colloidal silicon dioxide, low substituted hydroxypropyl cellulose, silicon dioxide and stearic acid.

**CLINICAL PHARMACOLOGY**

Pyridostigmine bromide inhibits the destruction of acetylcholine by cholinesterase and thereby permits freer transmission of nerve impulses across the neuromuscular junction. Pyridostigmine is an analog of neostigmine (Prostigmin<sup>®</sup>#), but differs from it in certain clinically significant respects; for example, pyridostigmine is characterized by a longer duration of action and fewer gastrointestinal side effects.

**INDICATIONS AND USAGE**

Pyridostigmine bromide tablets, USP are useful in the treatment of myasthenia gravis.

**CONTRAINDICATIONS**

Pyridostigmine bromide tablets, USP are contraindicated in mechanical intestinal or urinary obstruction, and particular caution should be used in its administration to patients with bronchial asthma. Care should be observed in the use of atropine for counteracting side effects, as discussed below.

**WARNINGS**

Although failure of patients to show clinical improvement may reflect underdosage, it can also be indicative of overdosage. As is true of all cholinergic drugs, overdosage of

pyridostigmine bromide may result in cholinergic crisis, a state characterized by increasing muscle weakness which, through involvement of the muscles of respiration, may lead to death. Myasthenic crisis due to an increase in the severity of the disease is also accompanied by extreme muscle weakness, and thus may be difficult to distinguish from cholinergic crisis on a symptomatic basis. Such differentiation is extremely important, since increases in doses of pyridostigmine bromide or other drugs of this class in the presence of cholinergic crisis or of a refractory or "insensitive" state could have grave consequences. Osserman and Genkins<sup>1</sup> indicate that the differential diagnosis of the two types of crisis may require the use of Tensilon<sup>®</sup># (edrophonium chloride) as well as clinical judgment. The treatment of the two conditions obviously differs radically. Whereas the presence of myasthenic crisis suggests the need for more intensive anticholinesterase therapy, the diagnosis of cholinergic crisis, according to Osserman and Genkins,<sup>1</sup> calls for the prompt *withdrawal* of all drugs of this type. The immediate use of atropine in cholinergic crisis is also recommended.

Atropine may also be used to abolish or obtund gastrointestinal side effects or other muscarinic reactions; but such use, by masking signs of overdosage, can lead to inadvertent induction of cholinergic crisis.

For detailed information on the management of patients with myasthenia gravis, the physician is referred to one of the excellent reviews such as those by Osserman and Genkins,<sup>2</sup> Grob<sup>3</sup> or Schwab.<sup>4,5</sup>

*Usage in Pregnancy:* The safety of pyridostigmine bromide during pregnancy or lactation in humans has not been established. Therefore, use of pyridostigmine bromide in women who may become pregnant requires weighing the drug's potential benefits against its possible hazards to mother and child.

## **PRECAUTIONS**

Pyridostigmine is mainly excreted unchanged by the kidney.<sup>6,7,8</sup> Therefore, lower doses may be required in patients with renal disease, and treatment should be based on titration of drug dosage to effect.<sup>6,7</sup>

*Pediatric Use:* Safety and effectiveness in pediatric patients have not been established.

## **ADVERSE REACTIONS**

The side effects of pyridostigmine bromide are most commonly related to overdosage and generally are of two varieties, muscarinic and nicotinic. Among those in the former group are nausea, vomiting, diarrhea, abdominal cramps, increased peristalsis, increased salivation, increased bronchial secretions, miosis and diaphoresis. Nicotinic side effects are comprised chiefly of muscle cramps, fasciculation and weakness. Muscarinic side effects can usually be counteracted by atropine, but for reasons shown in the preceding section the expedient is not without danger. As with any compound containing the bromide radical, a skin rash may be seen in an occasional patient. Such reactions usually subside promptly upon discontinuance of the medication.

## **DOSAGE AND ADMINISTRATION**

Pyridostigmine bromide tablets, USP is available as

*Conventional Tablets* - each containing 60 mg pyridostigmine bromide.

*Dosage:* The size and frequency of the dosage must be adjusted to the needs of the individual patient.

*Conventional Tablets* - The average dose is ten 60 mg tablets, spaced to provide maximum relief when maximum strength is needed. In severe cases as many as 25 tablets a day may be required, while in mild cases one to six tablets a day may suffice.

*Note:* For information on a diagnostic test for myasthenia gravis, and for the evaluation

and stabilization of therapy, please see product literature on Tensilon®# (edrophonium chloride).

## HOW SUPPLIED

Pyridostigmine Bromide Tablets USP, 60 mg having *functional scoring*. Pyridostigmine Bromide Tablets USP, 60 mg are white to off-white, round, flat, uncoated tablets with quadrisect breakline on one side and debossed with '659' on the other side and are supplied as follows:

NDC 68382-659-06 in bottles of 30 tablets with child-resistant closure

NDC 68382-659-16 in bottles of 90 tablets with child-resistant closure

NDC 68382-659-01 in bottles of 100 tablets with child-resistant closure

NDC 68382-659-05 in bottles of 500 tablets

## Storage

Store at 20° to 25°C (68° to 77°F) [See USP Controlled Room Temperature]. Dispense in original container.

**IMPORTANT: These tablets are hygroscopic. Keep in a dry place with the silica gel enclosed.**

## REFERENCES

1. Osserman KE, Genkins G. Studies in myasthenia gravis: Reduction in mortality rate after crisis. *JAMA*. Jan 1963; 183:97-101.
2. Osserman KE, Genkins G. Studies in myasthenia gravis. *NY State J Med*. June 1961; 61:2076-2085.
3. Grob D. Myasthenia gravis. A review of pathogenesis and treatment. *Arch Intern Med*. Oct 1961; 108:615-638.
4. Schwab RS. Management of myasthenia gravis. *New Eng J Med*. Mar 1963; 268:596-597.
5. Schwab RS. Management of myasthenia gravis. *New Eng J Med*. Mar 1963; 268:717-719.
6. Cronnelly R, Stanski DR, Miller RD, Sheiner LB. Pyridostigmine kinetics with and without renal function. *Clin Pharmacol Ther*. 1980; 28:No. 1, 78-81.
7. Miller RD. Pharmacodynamics and pharmacokinetics of anticholinesterase. In: Ruegheimer E, Zindler M, ed. *Anaesthesiology*. (Hamburg, Germany: Congress; Sep 14-21, 1980; 222-223.) (Int Congr. No. 538), Amsterdam, Netherlands: Excerpta Medica; 1981.
8. Breyer-Pfaff U, Maier U, Brinkmann AM, Schumm F. Pyridostigmine kinetics in healthy subjects and patients with myasthenia gravis. *Clin Pharmacol Ther*. 1985;5:495-501.

#Brands mentioned are trademarks of their respective owners.

**Call your doctor for medical advice about side effects. You may report side effects to FDA at 1-800-FDA-1088.**

**Manufactured by:**

**Zydus Lifesciences Ltd.,**

Baddi, India

**Distributed by:**

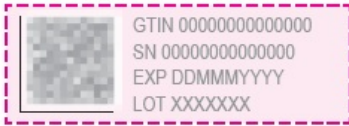
**Zydus Pharmaceuticals USA Inc.**

Pennington, NJ 08534

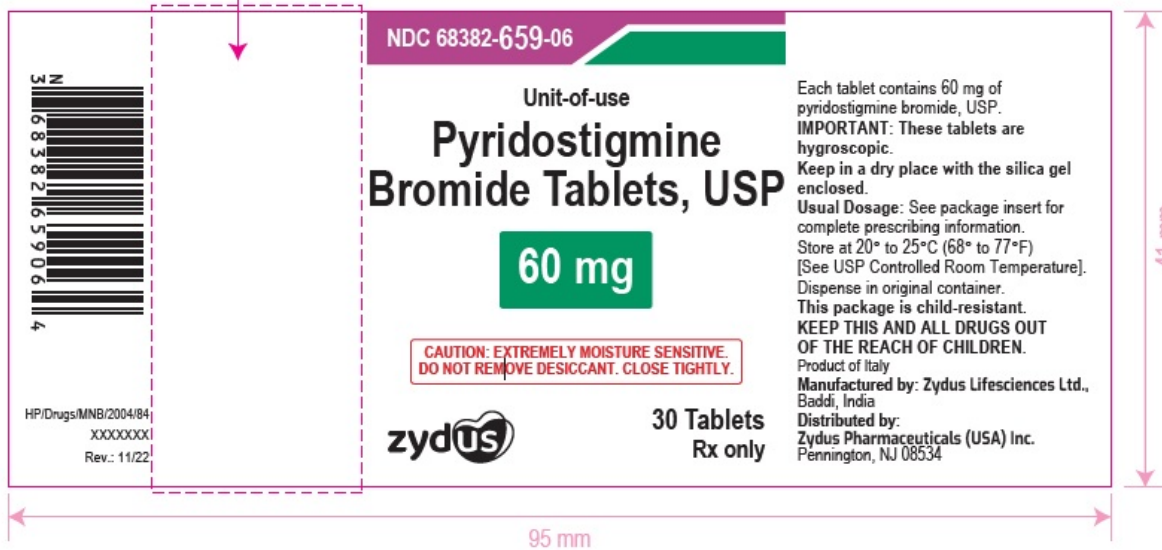
Rev.: 11/22

**PACKAGE LABEL.PRINCIPAL DISPLAY PANEL**

NDC 68382-659-06 in bottles of 30 tablets  
 Pyridostigmine Bromide Tablets USP, 60 mg  
 30 Tablets  
 Rx only  
 Zydus



Over Coding Template  
 No Varnished Area (Do Not Print)  
 (18 x 41 mm)



**PYRIDOSTIGMINE BROMIDE**

pyridostigmine bromide tablet

Product Information			
<b>Product Type</b>	HUMAN PRESCRIPTION DRUG	<b>Item Code (Source)</b>	NDC:68382-659
<b>Route of Administration</b>	ORAL		
Active Ingredient/Active Moiety			
Ingredient Name	Basis of Strength	Strength	
<b>PYRIDOSTIGMINE BROMIDE</b> (UNII: KVI301NA53) (PYRIDOSTIGMINE - UNII:19QM69HH21)	PYRIDOSTIGMINE BROMIDE	60 mg	
Inactive Ingredients			
Ingredient Name	Strength		
<b>ANHYDROUS LACTOSE</b> (UNII: 3SY5LH9PMK)			
<b>HYDROXYPROPYL CELLULOSE, LOW SUBSTITUTED</b> (UNII: 2165RE0K14)			
<b>SILICON DIOXIDE</b> (UNII: ETJ7Z6XBU4)			
<b>STEARIC ACID</b> (UNII: 4ELV7Z65AP)			

**Product Characteristics**

<b>Color</b>	WHITE (white to off-white)	<b>Score</b>	4 pieces
<b>Shape</b>	ROUND	<b>Size</b>	10mm
<b>Flavor</b>		<b>Imprint Code</b>	659
<b>Contains</b>			

**Packaging**

#	Item Code	Package Description	Marketing Start Date	Marketing End Date
1	NDC:68382-659-06	30 in 1 BOTTLE; Type 0: Not a Combination Product	08/07/2015	
2	NDC:68382-659-16	90 in 1 BOTTLE; Type 0: Not a Combination Product	08/07/2015	
3	NDC:68382-659-01	100 in 1 BOTTLE; Type 0: Not a Combination Product	08/07/2015	
4	NDC:68382-659-05	500 in 1 BOTTLE; Type 0: Not a Combination Product	08/07/2015	

**Marketing Information**

Marketing Category	Application Number or Monograph Citation	Marketing Start Date	Marketing End Date
ANDA	ANDA205650	08/07/2015	

**Labeler** - Zydus Pharmaceuticals (USA) Inc. (156861945)

Revised: 11/2023

Zydus Pharmaceuticals (USA) Inc.