

## HIGHLIGHTS OF PRESCRIBING INFORMATION

These highlights do not include all the information needed to use RYTHMOL SR safely and effectively. See full prescribing information for RYTHMOL SR.

**RYTHMOL SR (propafenone hydrochloride) Extended-Release Capsules for oral use**

Initial U.S. Approval: 1989

### WARNING: MORTALITY

See full prescribing information for complete boxed warning.

- An increased rate of death or reversed cardiac arrest rate was seen in patients treated with encainide or flecainide (Class IC antiarrhythmics) compared with that seen in patients assigned to placebo. At present it is prudent to consider any IC antiarrhythmic to have a significant risk of provoking proarrhythmic events in patients with structural heart disease.
- Given the lack of any evidence that these drugs improve survival, antiarrhythmic agents should generally be avoided in patients with non-life-threatening ventricular arrhythmias, even if the patients are experiencing unpleasant, but not life-threatening, symptoms or signs.

### RECENT MAJOR CHANGES

Contraindications (4) 02/2013  
Warnings and Precautions, Unmasking Brugada Syndrome (5.2) 02/2013

### INDICATIONS AND USAGE

RYTHMOL SR is an antiarrhythmic indicated to prolong the time to recurrence of symptomatic atrial fibrillation (AF) in patients with episodic (most likely paroxysmal or persistent) AF who do not have structural heart disease. (1)

#### Usage Considerations:

- Use in patients with permanent atrial fibrillation or with atrial flutter or PSVT has not been evaluated. Do not use to control ventricular rate during atrial fibrillation. (1)
- In patients with atrial fibrillation and atrial flutter, use RYTHMOL SR with drugs that increase the atrioventricular nodal refractory period. (1)
- The effect of propafenone on mortality has not been determined. (1)

### DOSAGE AND ADMINISTRATION

- Initiate therapy with 225 mg given every 12 hours. (2)
- Dosage may be increased at a minimum of 5 day intervals to 325 mg every 12 hours and, if necessary, to 425 mg every 12 hours. (2)
- Dose reduction should be considered in patients with hepatic impairment, significant widening of the QRS complex, or second or third degree AV block. (2)

### DOSAGE FORMS AND STRENGTHS

Capsules: 225 mg, 325 mg, 425 mg. (3)

### CONTRAINDICATIONS

- Heart failure (4)
- Cardiogenic shock (4)
- Sinoatrial, atrioventricular, and intraventricular disorders of impulse generation and/or conduction in the absence of pacemaker (4)
- Known Brugada Syndrome (4)
- Bradycardia (4)

- Marked hypotension (4)
- Bronchospastic disorders and severe obstructive pulmonary disease (4)
- Marked electrolyte imbalance (4)

### WARNINGS AND PRECAUTIONS

- May cause new or worsened arrhythmias. Evaluate patients via ECG prior to and during therapy. (5.1)
- RYTHMOL SR may unmask Brugada or Brugada-like Syndrome. Evaluate patients via ECG after initiation of therapy. (4, 5.2)
- Avoid use with other antiarrhythmic agents or drugs that prolong the QT interval. (5.3)
- Avoid simultaneous use of propafenone with both a cytochrome P450 2D6 inhibitor and a 3A4 inhibitor. (5.4)
- May provoke overt heart failure. (5.5)
- May cause dose-related first degree AV block or other conduction disturbances. Should not be given to patients with conduction defects in absence of a pacemaker. (5.6)
- May affect artificial pacemakers. Pacemakers should be monitored during therapy. (5.7)
- Agranulocytosis: Patients should report signs of infection. (5.8)
- Administer cautiously to patients with impaired hepatic and renal function. (5.9, 5.10)
- Exacerbation of myasthenia gravis has been reported. (5.11)

### ADVERSE REACTIONS

The most commonly reported adverse events with propafenone (>5% and greater than placebo) excluding those not reasonably associated with the use of the drug included the following: dizziness, palpitations, chest pain, dyspnea, taste disturbance, nausea, fatigue, anxiety, constipation, upper respiratory tract infection, edema, and influenza. (6.1)

To report SUSPECTED ADVERSE REACTIONS, contact GlaxoSmithKline at 1-888-825-5249 or FDA at 1-800-FDA-1088 or [www.fda.gov/medwatch](http://www.fda.gov/medwatch).

### DRUG INTERACTIONS

- Inhibitors of CYP2D6, 1A2, and 3A4 may increase propafenone levels which may lead to cardiac arrhythmias. Simultaneous use with both a CYP3A4 and CYP2D6 inhibitor (or in patients with CYP2D6 deficiency) should be avoided. (7.1)
- Propafenone may increase digoxin or warfarin levels. (7.2, 7.3)
- Orlistat may reduce propafenone concentrations. Abrupt cessation of orlistat in patients stable on RYTHMOL SR has resulted in convulsions, atrioventricular block, and circulatory failure. (7.4)
- Concomitant use of lidocaine may increase central nervous system side effects. (7.6)

See 17 for PATIENT COUNSELING INFORMATION and FDA-approved patient labeling.

Revised: 02/2013

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1 FULL PRESCRIBING INFORMATION

**WARNING: MORTALITY**

- **In the National Heart, Lung and Blood Institute’s Cardiac Arrhythmia Suppression Trial (CAST), a long-term, multi-center, randomized, double-blind study in patients with asymptomatic non-life-threatening ventricular arrhythmias who had a myocardial infarction more than 6 days but less than 2 years previously, an increased rate of death or reversed cardiac arrest rate (7.7%; 56/730) was seen in patients treated with encainide or flecainide (Class IC antiarrhythmics) compared with that seen in patients assigned to placebo (3.0%; 22/725). The average duration of treatment with encainide or flecainide in this study was 10 months.**
- **The applicability of the CAST results to other populations (e.g., those without recent myocardial infarction) or other antiarrhythmic drugs is uncertain, but at present, it is prudent to consider any IC antiarrhythmic to have a significant proarrhythmic risk in patients with structural heart disease. Given the lack of any evidence that these drugs improve survival, antiarrhythmic agents should generally be avoided in patients with non-life-threatening ventricular arrhythmias, even if the patients are experiencing unpleasant, but not life-threatening, symptoms or signs.**

1 INDICATIONS AND USAGE

RYTHMOL SR<sup>®</sup> is indicated to prolong the time to recurrence of symptomatic atrial fibrillation (AF) in patients with episodic (most likely paroxysmal or persistent) AF who do not have structural heart disease.

**Usage Considerations:**

- The use of RYTHMOL SR in patients with permanent AF or in patients exclusively with atrial flutter or paroxysmal supraventricular tachycardia (PSVT) has not been evaluated. Do not use RYTHMOL SR to control ventricular rate during AF.
- Some patients with atrial flutter treated with propafenone have developed 1:1 conduction, producing an increase in ventricular rate. Concomitant treatment with drugs that increase the functional atrioventricular (AV) nodal refractory period is recommended.
- The effect of propafenone on mortality has not been determined [*see Boxed Warning*].

2 DOSAGE AND ADMINISTRATION

RYTHMOL SR can be taken with or without food. Do not crush or further divide the contents of the capsule.

The dose of RYTHMOL SR must be individually titrated on the basis of response and tolerance. Initiate therapy with RYTHMOL SR 225 mg given every 12 hours. Dosage may be increased at a minimum of 5-day interval to 325 mg given every 12 hours. If additional

36 therapeutic effect is needed, the dose of RYTHMOL SR may be increased to 425 mg given every  
37 12 hours.

38 In patients with hepatic impairment or those with significant widening of the QRS  
39 complex or second or third degree AV block, consider reducing the dose.

40 The combination of CYP3A4 inhibition and either CYP2D6 deficiency or CYP2D6  
41 inhibition with the simultaneous administration of propafenone may significantly increase the  
42 concentration of propafenone and thereby increase the risk of proarrhythmia and other adverse  
43 events. Therefore, avoid simultaneous use of RYTHMOL SR with both a CYP2D6 inhibitor and  
44 a CYP3A4 inhibitor [*see Warnings and Precautions (5.4) and Drug Interactions (7.1)*].

### 45 **3 DOSAGE FORMS AND STRENGTHS**

46 RYTHMOL SR (propafenone HCl) capsules are supplied as white, opaque, hard gelatin  
47 capsules containing either 225 mg, 325 mg, or 425 mg of propafenone HCl. The 225 mg strength  
48 is imprinted in red with GS EUG followed by 225. The 325 mg strength is imprinted in red with  
49 GS F1Y followed by 325, and also has a single red band around  $\frac{3}{4}$  of the circumference of the  
50 body. The 425 mg strength is imprinted in red with GS UY2 followed by 425, and also has three  
51 red bands around  $\frac{3}{4}$  of the circumference of the body.

### 52 **4 CONTRAINDICATIONS**

53 RYTHMOL SR is contraindicated in the following circumstances:

- 54 • Heart failure
- 55 • Cardiogenic shock
- 56 • Sinoatrial, atrioventricular and intraventricular disorders of impulse generation or conduction  
57 (e.g., sick sinus node syndrome, AV block) in the absence of an artificial pacemaker
- 58 • Known Brugada Syndrome
- 59 • Bradycardia
- 60 • Marked hypotension
- 61 • Bronchospastic disorders or severe obstructive pulmonary disease
- 62 • Marked electrolyte imbalance

### 63 **5 WARNINGS AND PRECAUTIONS**

#### 64 **5.1 Proarrhythmic Effects**

65 Propafenone has caused new or worsened arrhythmias. Such proarrhythmic effects  
66 include sudden death and life-threatening ventricular arrhythmias such as ventricular fibrillation,  
67 ventricular tachycardia, asystole and torsade de pointes. It may also worsen premature  
68 ventricular contractions or supraventricular arrhythmias, and it may prolong the QT interval. It is  
69 therefore essential that each patient given RYTHMOL SR be evaluated electrocardiographically  
70 prior to and during therapy, to determine whether the response to RYTHMOL SR supports  
71 continued treatment. Because propafenone prolongs the QRS interval in the electrocardiogram,  
72 changes in the QT interval are difficult to interpret [*see Clinical Pharmacology (12.2)*].

73 In the RAFT study [see *Clinical Studies (14)*], there were too few deaths to assess the  
74 long term risk to patients. There were 5 deaths, 3 in the pooled RYTHMOL SR group (0.8%) and  
75 2 in the placebo group (1.6%). In the overall RYTHMOL SR and RYTHMOL immediate-release  
76 database of 8 studies, the mortality rate was 2.5% per year on propafenone and 4.0% per year on  
77 placebo. Concurrent use of propafenone with other antiarrhythmic agents has not been well  
78 studied.

79 In a U.S. uncontrolled, open label multicenter trial using the immediate-release  
80 formulation in patients with symptomatic supraventricular tachycardia (SVT), 1.9% (9/474) of  
81 these patients experienced ventricular tachycardia (VT) or ventricular fibrillation (VF) during the  
82 study. However, in 4 of the 9 patients, the ventricular tachycardia was of atrial origin. Six of the  
83 9 patients that developed ventricular arrhythmias did so within 14 days of onset of therapy.  
84 About 2.3% (11/474) of all patients had recurrence of SVT during the study which could have  
85 been a change in the patients' arrhythmia behavior or could represent a proarrhythmic event.  
86 Case reports in patients treated with propafenone for atrial fibrillation/flutter have included  
87 increased premature ventricular contractions (PVCs), VT, VF, torsades de pointes, asystole, and  
88 death.

89 Overall in clinical trials with RYTHMOL immediate-release (which included patients  
90 treated for ventricular arrhythmias, atrial fibrillation/flutter, and PSVT), 4.7% of all patients had  
91 new or worsened ventricular arrhythmia possibly representing a proarrhythmic event (0.7% was  
92 an increase in PVCs; 4.0% a worsening, or new appearance, of VT or VF). Of the patients who  
93 had worsening of VT (4%), 92% had a history of VT and/or VT/VF, 71% had coronary artery  
94 disease, and 68% had a prior myocardial infarction. The incidence of proarrhythmia in patients  
95 with less serious or benign arrhythmias, which include patients with an increase in frequency of  
96 PVCs, was 1.6%. Although most proarrhythmic events occurred during the first week of therapy,  
97 late events also were seen and the CAST study [see *Boxed Warning: Mortality*] suggests that an  
98 increased risk of proarrhythmia is present throughout treatment.

## 99 **5.2 Unmasking Brugada Syndrome**

100 Brugada Syndrome may be unmasked after exposure to RYTHMOL SR. Perform an  
101 ECG after initiation of RYTHMOL SR and discontinue the drug if changes are suggestive of  
102 Brugada Syndrome [see *Contraindications (4)*].

## 103 **5.3 Use with Drugs that Prolong the QT Interval and Antiarrhythmic Agents**

104 The use of RYTHMOL SR in conjunction with other drugs that prolong the QT interval  
105 has not been extensively studied. Such drugs may include many antiarrhythmics, some  
106 phenothiazines, tricyclic antidepressants, and oral macrolides. Withhold Class IA and III  
107 antiarrhythmic agents for at least 5 half-lives prior to dosing with RYTHMOL SR. Avoid the use  
108 of propafenone with Class IA and III antiarrhythmic agents (including quinidine and  
109 amiodarone). There is only limited experience with the concomitant use of Class IB or IC  
110 antiarrhythmics.

111 **5.4 Drug Interactions: Simultaneous Use with Inhibitors of Cytochrome P450**  
112 **Isoenzymes 2D6 and 3A4**

113 Propafenone is metabolized by CYP2D6, CYP3A4, and CYP1A2 isoenzymes.  
114 Approximately 6% of Caucasians in the U.S. population are naturally deficient in CYP2D6  
115 activity and to a somewhat lesser extent in other demographic groups. Drugs that inhibit these  
116 CYP pathways (such as desipramine, paroxetine, ritonavir, sertraline for CYP2D6; ketoconazole,  
117 erythromycin, saquinavir, and grapefruit juice for CYP3A4; and amiodarone and tobacco smoke  
118 for CYP1A2) can be expected to cause increased plasma levels of propafenone.

119 Increased exposure to propafenone may lead to cardiac arrhythmias and exaggerated  
120 beta-adrenergic blocking activity. Because of its metabolism, the combination of CYP3A4  
121 inhibition and either CYP2D6 deficiency or CYP2D6 inhibition in users of propafenone is  
122 potentially hazardous. Therefore, avoid simultaneous use of RYTHMOL SR with both a  
123 CYP2D6 inhibitor and a CYP3A4 inhibitor.

124 **5.5 Use in Patients with a History of Heart Failure**

125 Propafenone exerts a negative inotropic activity on the myocardium as well as beta  
126 blockade effects and may provoke overt heart failure. In the U.S. trial (RAFT) in patients with  
127 symptomatic AF, heart failure was reported in 4 (1.0%) patients receiving RYTHMOL SR (all  
128 doses), compared to 1 (0.8%) patient receiving placebo. Proarrhythmic effects more likely occur  
129 when propafenone is administered to patients with heart failure (NYHA III and IV) or severe  
130 myocardial ischemia [*see Contraindications (4)*].

131 In clinical trial experience with RYTHMOL immediate-release, new or worsened heart  
132 failure has been reported in 3.7% of patients with ventricular arrhythmia. These events were  
133 more likely in subjects with preexisting heart failure and coronary artery disease. New onset of  
134 heart failure attributable to propafenone developed in <0.2% of patients with ventricular  
135 arrhythmia and in 1.9% of patients with paroxysmal AF or PSVT.

136 **5.6 Conduction Disturbances**

137 Propafenone slows atrioventricular conduction and may also cause dose-related first  
138 degree AV block. Average PR interval prolongation and increases in QRS duration are also  
139 dose-related. Do not give propafenone to patients with atrioventricular and intraventricular  
140 conduction defects in the absence of a pacemaker [*see Contraindications (4) and Clinical*  
141 *Pharmacology (12.2)*].

142 In a U.S. trial (RAFT) in 523 patients with a history of symptomatic AF treated with  
143 RYTHMOL SR, sinus bradycardia (rate <50 beats/min) was reported with the same frequency  
144 with RYTHMOL SR and placebo.

145 **5.7 Effects on Pacemaker Threshold**

146 Propafenone may alter both pacing and sensing thresholds of implanted pacemakers and  
147 defibrillators. During and after therapy, monitor and re-program these devices accordingly.

148 **5.8 Agranulocytosis**

149 Agranulocytosis has been reported in patients receiving propafenone. Generally, the  
150 agranulocytosis occurred within the first 2 months of propafenone therapy and upon

151 discontinuation of therapy, the white count usually normalized by 14 days. Unexplained fever or  
152 decrease in white cell count, particularly during the initial 3 months of therapy, warrant  
153 consideration of possible agranulocytosis or granulocytopenia. Instruct patients to report  
154 promptly any signs of infection such as fever, sore throat, or chills.

### 155 **5.9 Use in Patients with Hepatic Dysfunction**

156 Propafenone is highly metabolized by the liver. Severe liver dysfunction increases the  
157 bioavailability of propafenone to approximately 70% compared to 3 to 40% in patients with  
158 normal liver function when given RYTHMOL immediate-release tablets. In 8 patients with  
159 moderate to severe liver disease administered RYTHMOL immediate-release tablets, the mean  
160 half-life was approximately 9 hours. No studies have compared bioavailability of propafenone  
161 from RYTHMOL SR in patients with normal and impaired hepatic function. Increased  
162 bioavailability of propafenone in these patients may result in excessive accumulation. Carefully  
163 monitor patients with impaired hepatic function for excessive pharmacological effects [*see*  
164 *Overdosage (10)*].

### 165 **5.10 Use in Patients with Renal Dysfunction**

166 Approximately 50% of propafenone metabolites are excreted in the urine following  
167 administration of RYTHMOL immediate-release tablets. No studies have been performed to  
168 assess the percentage of metabolites eliminated in the urine following the administration of  
169 RYTHMOL SR capsules.

170 In patients with impaired renal function monitor for signs of overdose [*see*  
171 *Overdosage (10)*].

### 172 **5.11 Use in Patients with Myasthenia Gravis**

173 Exacerbation of myasthenia gravis has been reported during propafenone therapy.

### 174 **5.12 Elevated ANA Titers**

175 Positive ANA titers have been reported in patients receiving propafenone. They have  
176 been reversible upon cessation of treatment and may disappear even in the face of continued  
177 propafenone therapy. These laboratory findings were usually not associated with clinical  
178 symptoms, but there is one published case of drug-induced lupus erythematosus (positive  
179 rechallenge); it resolved completely upon discontinuation of therapy. Carefully evaluate patients  
180 who develop an abnormal ANA test and if persistent or worsening elevation of ANA titers is  
181 detected, consider discontinuing therapy.

### 182 **5.13 Impaired Spermatogenesis**

183 Reversible disorders of spermatogenesis have been demonstrated in monkeys, dogs and  
184 rabbits after high dose intravenous administration of propafenone. Evaluation of the effects of  
185 short-term RYTHMOL administration on spermatogenesis in 11 normal subjects suggested that  
186 propafenone produced a reversible, short-term drop (within normal range) in sperm count.

## 187 **6 ADVERSE REACTIONS**

### 188 **6.1 Clinical Trials Experience**

189 Because clinical trials are conducted under widely varying conditions, adverse reaction  
190 rates observed in the clinical trials of a drug cannot be directly compared to rates in the clinical  
191 trials of another drug and may not reflect the rates observed in practice.

192 The data described below reflect exposure to RYTHMOL SR 225 mg twice daily in 126  
193 patients, to RYTHMOL SR 325 mg twice daily in 135 patients, to RYTHMOL SR 425 mg twice  
194 daily in 136 patients, and to placebo in 126 patients for up to 39 weeks (mean 20 weeks) in a  
195 placebo-controlled trial (RAFT) conducted in the US. The most commonly reported adverse  
196 events with propafenone (>5% and greater than placebo) excluding those not reasonably  
197 associated with the use of the drug or because they were associated with the condition being  
198 treated, were dizziness, palpitations, chest pain, dyspnea, taste disturbance, nausea, fatigue,  
199 anxiety, constipation, upper respiratory tract infection, edema, and influenza. The frequency of  
200 discontinuation due to adverse events was 17%, and the rate was highest during the first 14 days  
201 of treatment.

202 Cardiac-related adverse events occurring in  $\geq 2\%$  of the patients in any of the RAFT  
203 propafenone SR treatment groups and more common with propafenone than with placebo,  
204 excluding those that are common in the population and those not plausibly related to drug  
205 therapy, included the following: angina pectoris, atrial flutter, AV block first degree,  
206 bradycardia, congestive cardiac failure, cardiac murmur, edema, dyspnea, rales, wheezing, and  
207 cardioactive drug level above therapeutic.

208 Propafenone prolongs the PR and QRS intervals in patients with atrial and ventricular  
209 arrhythmias. Prolongation of the QRS interval makes it difficult to interpret the effect of  
210 propafenone on the QT interval [*see Clinical Pharmacology (12.2)*].

211 Non-cardiac related adverse events occurring in  $\geq 2\%$  of the patients in any of the RAFT  
212 propafenone SR treatment groups and more common with propafenone than with placebo,  
213 excluding those that are common in the population and those not plausibly related to drug  
214 therapy, included the following: blurred vision, constipation, diarrhea, dry mouth, flatulence,  
215 nausea, vomiting, fatigue, weakness, upper respiratory tract infection, blood alkaline phosphatase  
216 increased, hematuria, muscle weakness, dizziness (excluding vertigo), headache, taste  
217 disturbance, tremor, somnolence, anxiety, depression, ecchymosis.

218 No clinically important differences in incidence of adverse reactions were noted by age  
219 or gender. Too few non-Caucasian patients were enrolled to assess adverse events according to  
220 race.

221 Adverse events occurring in 2% or more of the patients in any of the ERAFT [*see*  
222 *Clinical Studies (14)*] propafenone SR treatment groups and not listed above include the  
223 following: bundle branch block left, bundle branch block right, conduction disorders, sinus  
224 bradycardia, and hypotension.

225 Other adverse events reported with propafenone clinical trials not already listed  
226 elsewhere in the prescribing information include the following adverse events by body and  
227 preferred term.

228 Blood and Lymphatic System Disorders: Anemia, lymphadenopathy, spleen disorder,  
229 thrombocytopenia.

230 Cardiac Disorders: Unstable angina, atrial hypertrophy, cardiac arrest, coronary artery  
231 disease, extrasystoles, myocardial infarction, nodal arrhythmia, palpitations, pericarditis,  
232 sinoatrial block, sinus arrest, sinus arrhythmia, supraventricular extrasystoles, ventricular  
233 extrasystoles, ventricular hypertrophy.

234 Ear and Labyrinth Disorders: Hearing impaired, tinnitus, vertigo.

235 Eye Disorders: Eye hemorrhage, eye inflammation, eyelid ptosis, miosis, retinal  
236 disorder, visual acuity reduced.

237 Gastrointestinal Disorders: Abdominal distension, abdominal pain, duodenitis,  
238 dyspepsia, dysphagia, eructation, gastritis, gastroesophageal reflux disease, gingival bleeding,  
239 glossitis, glossodynia, gum pain, halitosis, intestinal obstruction, melena, mouth ulceration,  
240 pancreatitis, peptic ulcer, rectal bleeding, sore throat.

241 General Disorders and Administration Site Conditions: Chest pain, feeling hot,  
242 hemorrhage, malaise, pain, pyrexia.

243 Hepatobiliary Disorders: Hepatomegaly.

244 Investigations: Abnormal heart sounds, abnormal pulse, carotid bruit, decreased blood  
245 chloride, decreased blood pressure, decreased blood sodium, decreased hemoglobin, decreased  
246 neutrophil count, decreased platelet count, decreased prothrombin level, decreased red blood cell  
247 count, decreased weight, glycosuria present, increased alanine aminotransferase, increased  
248 aspartate aminotransferase, increased blood bilirubin, increased blood cholesterol, increased  
249 blood creatinine, increased blood glucose, increased blood lactate dehydrogenase, increased  
250 blood pressure, increased blood prolactin, increased blood triglycerides, increased blood urea,  
251 increased blood uric acid, increased eosinophil count, increased gamma-glutamyltransferase,  
252 increased monocyte count, increased prostatic specific antigen, increased prothrombin level,  
253 increased weight, increased white blood cell count, ketonuria present, proteinuria present.

254 Metabolism and Nutrition Disorders: Anorexia, dehydration, diabetes mellitus, gout,  
255 hypercholesterolemia, hyperglycemia, hyperlipidemia, hypokalemia.

256 Musculoskeletal, Connective Tissue and Bone Disorders: Arthritis, bursitis,  
257 collagen-vascular disease, costochondritis, joint disorder, muscle cramps, muscle spasms,  
258 myalgia, neck pain, pain in jaw, sciatica, tendonitis.

259 Nervous System Disorders: Amnesia, ataxia, balance impaired, brain damage,  
260 cerebrovascular accident, dementia, gait abnormal, hypertonia, hypohesia, insomnia, paralysis,  
261 paresthesia, peripheral neuropathy, speech disorder, syncope, tongue hypoesthesia.

262 Psychiatric Disorders: Decreased libido, emotional disturbance, mental disorder,  
263 neurosis, nightmare, sleep disorder.

264 Renal and Urinary Disorders: Dysuria, nocturia, oliguria, pyuria, renal failure, urinary  
265 casts, urinary frequency, urinary incontinence, urinary retention, urine abnormal.

266 Reproductive System and Breast Disorders: Breast pain, impotence, prostatism.

267           Respiratory, Thoracic and Mediastinal Disorders: Atelectasis, breath sounds  
268 decreased, chronic obstructive airways disease, cough, epistaxis, hemoptysis, lung disorder,  
269 pleural effusion, pulmonary congestion, rales, respiratory failure, rhinitis, throat tightness.

270           Skin and Subcutaneous Tissue Disorders: Alopecia, dermatitis, dry skin, erythema,  
271 nail abnormality, petechiae, pruritus, sweating increased, urticaria.

272           Vascular Disorders: Arterial embolism limb, deep limb venous thrombosis, flushing,  
273 hematoma, hypertension, hypertensive crisis, hypotension, labile blood pressure, pallor,  
274 peripheral coldness, peripheral vascular disease, thrombosis.

## 275 **7 DRUG INTERACTIONS**

### 276 **7.1 CYP2D6 and CYP3A4 Inhibitors**

277           Drugs that inhibit CYP2D6 (such as desipramine, paroxetine, ritonavir, sertraline) and  
278 CYP3A4 (such as ketoconazole, ritonavir, saquinavir, erythromycin, and grapefruit juice) can be  
279 expected to cause increased plasma levels of propafenone. The combination of CYP3A4  
280 inhibition and either CYP2D6 deficiency or CYP2D6 inhibition with administration of  
281 propafenone may increase the risk of adverse reactions, including proarrhythmia. Therefore,  
282 simultaneous use of RYTHMOL SR with both a CYP2D6 inhibitor and a CYP3A4 inhibitor  
283 should be avoided [*see Warnings and Precautions (5.4) and Dosage and Administration (2)*].

284           Amiodarone: Concomitant administration of propafenone and amiodarone can affect  
285 conduction and repolarization and is not recommended.

286           Cimetidine: Concomitant administration of propafenone immediate-release tablets and  
287 cimetidine in 12 healthy subjects resulted in a 20% increase in steady-state plasma  
288 concentrations of propafenone.

289           Fluoxetine: Concomitant administration of propafenone and fluoxetine in extensive  
290 metabolizers increased the S propafenone  $C_{max}$  and AUC by 39 and 50% and the R propafenone  
291  $C_{max}$  and AUC by 71 and 50%.

292           Quinidine: Small doses of quinidine completely inhibit the CYP2D6 hydroxylation  
293 metabolic pathway, making all patients, in effect, slow metabolizers [*see Clinical Pharmacology*  
294 *(12)*]. Concomitant administration of quinidine (50 mg three times daily) with 150 mg  
295 immediate-release propafenone three times daily decreased the clearance of propafenone by 60%  
296 in extensive metabolizers, making them poor metabolizers. Steady-state plasma concentrations  
297 increased by more than 2-fold for propafenone, and decreased 50% for 5-OH-propafenone. A  
298 100 mg dose of quinidine increased steady state concentrations of propafenone 3-fold. Avoid  
299 concomitant use of propafenone and quinidine.

300           Rifampin: Concomitant administration of rifampin and propafenone in extensive  
301 metabolizers decreased the plasma concentrations of propafenone by 67% with a corresponding  
302 decrease of 5-OH-propafenone by 65%. The concentrations of norpropafenone increased by  
303 30%. In poor metabolizers, there was a 50% decrease in propafenone plasma concentrations and  
304 increased the AUC and  $C_{max}$  of norpropafenone by 74 and 20%, respectively. Urinary excretion  
305 of propafenone and its metabolites decreased significantly. Similar results were noted in elderly

306 patients: Both the AUC and  $C_{max}$  propafenone decreased by 84%, with a corresponding decrease  
307 in AUC and  $C_{max}$  of 5-OH-propafenone by 69 and 57%.

## 308 **7.2 Digoxin**

309 Concomitant use of propafenone and digoxin increased steady-state serum digoxin  
310 exposure (AUC) in patients by 60 to 270%, and decreased the clearance of digoxin by 31 to  
311 67%. Monitor plasma digoxin levels of patients receiving propafenone and adjust digoxin dosage  
312 as needed.

## 313 **7.3 Warfarin**

314 The concomitant administration of propafenone and warfarin increased warfarin plasma  
315 concentrations at steady state by 39% in healthy volunteers and prolonged the prothrombin time  
316 (PT) in patients taking warfarin. Adjust the warfarin dose as needed by monitoring INR  
317 (international normalized ratio).

## 318 **7.4 Orlistat**

319 Orlistat may limit the fraction of propafenone available for absorption. In post marketing  
320 reports, abrupt cessation of orlistat in patients stabilized on propafenone has resulted in severe  
321 adverse events including convulsions, atrioventricular block and acute circulatory failure.

## 322 **7.5 Beta-Antagonists**

323 Concomitant use of propafenone and propranolol in healthy subjects increased  
324 propranolol plasma concentrations at steady state by 113%. In 4 patients, administration of  
325 metoprolol with propafenone increased the metoprolol plasma concentrations at steady state by  
326 100 to 400%. The pharmacokinetics of propafenone was not affected by the coadministration of  
327 either propranolol or metoprolol. In clinical trials using propafenone immediate-release tablets,  
328 patients who were receiving beta-blockers concurrently did not experience an increased  
329 incidence of side effects.

## 330 **7.6 Lidocaine**

331 No significant effects on the pharmacokinetics of propafenone or lidocaine have been  
332 seen following their concomitant use in patients. However, concomitant use of propafenone and  
333 lidocaine has been reported to increase the risks of central nervous system side effects of  
334 lidocaine.

# 335 **8 USE IN SPECIFIC POPULATIONS**

## 336 **8.1 Pregnancy**

337 Pregnancy Category C. There are no adequate and well-controlled studies in pregnant  
338 women. RYTHMOL SR should be used during pregnancy only if the potential benefit justifies  
339 the potential risk to the fetus.

340 Animal Data: Teratogenic Effects: Propafenone has been shown to be embryotoxic  
341 (decreased survival) in rabbits and rats when given in oral maternally toxic doses of  
342 150 mg/kg/day (about 3 times the maximum recommended human dose [MRHD] on a  $mg/m^2$   
343 basis) and 600 mg/kg/day (about 6 times the MRHD on a  $mg/m^2$  basis), respectively. Although  
344 maternally tolerated doses (up to 270 mg/kg/day, about 3 times the MRHD on a  $mg/m^2$  basis)

345 produced no evidence of embryotoxicity in rats, post-implantation loss was elevated in all rabbit  
346 treatment groups (doses as low as 15 mg/kg/day, about 1/3 the MRHD on a mg/m<sup>2</sup> basis).

347 *Non-teratogenic Effects:* In a study in which female rats received daily oral doses of  
348 propafenone from mid-gestation through weaning of their offspring, doses as low as  
349 90 mg/kg/day (equivalent to the MRHD on a mg/m<sup>2</sup> basis) produced increases in maternal  
350 deaths. Doses of 360 or more mg/kg/day (4 or more times the MRHD on a mg/m<sup>2</sup> basis) resulted  
351 in reductions in neonatal survival, body weight gain and physiological development.

## 352 **8.2 Labor and Delivery**

353 It is not known whether the use of propafenone during labor or delivery has immediate or  
354 delayed adverse effects on the fetus, or whether it prolongs the duration of labor or increases the  
355 need for forceps delivery or other obstetrical intervention.

## 356 **8.3 Nursing Mothers**

357 Propafenone is excreted in human milk. Because of the potential for serious adverse  
358 reactions in nursing infants from propafenone, decide whether to discontinue nursing or to  
359 discontinue the drug, taking into account the importance of the drug to the mother.

## 360 **8.4 Pediatric Use**

361 The safety and effectiveness of propafenone in pediatric patients have not been  
362 established.

## 363 **8.5 Geriatric Use**

364 Of the total number of subjects in Phase 3 clinical studies of RYTHMOL SR  
365 (propafenone hydrochloride) 46% were 65 and over, while 16% were 75 and over. No overall  
366 differences in safety or effectiveness were observed between these subjects and younger  
367 subjects, but greater sensitivity of some older individuals at higher doses cannot be ruled out.  
368 The effect of age on the pharmacokinetics and pharmacodynamics of propafenone has not been  
369 studied.

## 370 **10 OVERDOSAGE**

371 The symptoms of overdosage may include hypotension, somnolence, bradycardia, intra-  
372 atrial and intraventricular conduction disturbances, and rarely convulsions and high grade  
373 ventricular arrhythmias. Defibrillation as well as infusion of dopamine and isoproterenol have  
374 been effective in controlling abnormal rhythm and blood pressure. Convulsions have been  
375 alleviated with intravenous diazepam. General supportive measures such as mechanical  
376 respiratory assistance and external cardiac massage may be necessary.

377 The hemodialysis of propafenone in patients with an overdose is expected to be of limited  
378 value in the removal of propafenone as a result of both its high protein binding (>95%) and large  
379 volume of distribution.

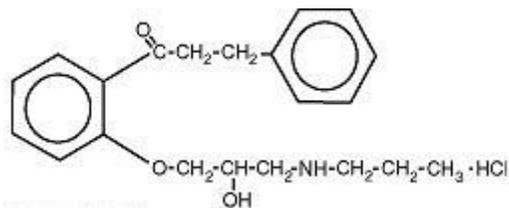
## 380 **11 DESCRIPTION**

381 RYTHMOL SR (propafenone hydrochloride) is an antiarrhythmic drug supplied in  
382 extended-release capsules of 225, 325 and 425 mg for oral administration.

383 Chemically, propafenone hydrochloride is 2'-[2-Hydroxy-3-(propylamino)-propoxy]-3-  
384 phenylpropiophenone hydrochloride, with a molecular weight of 377.92. The molecular formula  
385 is  $C_{21}H_{27}NO_3 \cdot HCl$ .

386 Propafenone HCl has some structural similarities to beta-blocking agents. The structural  
387 formula of propafenone HCl is given below:

388



390

391 Propafenone HCl occurs as colorless crystals or white crystalline powder with a very  
392 bitter taste. It is slightly soluble in water (20°C), chloroform and ethanol. RYTHMOL SR  
393 capsules are filled with cylindrical-shaped 2 x 2 mm microtablets containing propafenone and  
394 the following inactive ingredients: antifoam, gelatin, hypromellose, red iron oxide, magnesium  
395 stearate, shellac, sodium lauryl sulfate, sodium dodecyl sulfate, soy lecithin and titanium dioxide.

## 396 12 CLINICAL PHARMACOLOGY

### 397 12.1 Mechanism of Action

398 Propafenone is a Class 1C antiarrhythmic drug with local anesthetic effects, and a direct  
399 stabilizing action on myocardial membranes. The electrophysiological effect of propafenone  
400 manifests itself in a reduction of upstroke velocity (Phase 0) of the monophasic action potential.  
401 In Purkinje fibers, and to a lesser extent myocardial fibers, propafenone reduces the fast inward  
402 current carried by sodium ions. Diastolic excitability threshold is increased and effective  
403 refractory period prolonged. Propafenone reduces spontaneous automaticity and depresses  
404 triggered activity.

405 Studies in anesthetized dogs and isolated organ preparations show that propafenone has  
406 beta-sympatholytic activity at about 1/50 the potency of propranolol. Clinical studies employing  
407 isoproterenol challenge and exercise testing after single doses of propafenone indicate a beta-  
408 adrenergic blocking potency (per mg) about 1/40 that of propranolol in man. In clinical trials  
409 with the immediate-release formulation, resting heart rate decreases of about 8% were noted at  
410 the higher end of the therapeutic plasma concentration range. At very high concentrations *in*  
411 *vitro*, propafenone can inhibit the slow inward current carried by calcium, but this calcium  
412 antagonist effect probably does not contribute to antiarrhythmic efficacy. Moreover, propafenone  
413 inhibits a variety of cardiac potassium currents in *in vitro* studies (i.e. the transient outward, the  
414 delayed rectifier, and the inward rectifier current). Propafenone has local anesthetic activity  
415 approximately equal to procaine. Compared to propafenone, the main metabolite, 5-  
416 hydroxypropafenone, has similar sodium and calcium channel activity, but about 10 times less

417 beta-blocking activity (N-depropylpropafenone has weaker sodium channel activity but  
418 equivalent affinity for beta-receptors).

## 419 **12.2 Pharmacodynamics**

420 **Electrophysiology:** Electrophysiology studies in patients with ventricular tachycardia  
421 have shown that propafenone prolongs atrioventricular conduction while having little or no effect  
422 on sinus node function. Both atrioventricular nodal conduction time (AH interval) and His-  
423 Purkinje conduction time (HV interval) are prolonged. Propafenone has little or no effect on the  
424 atrial functional refractory period, but AV nodal functional and effective refractory periods are  
425 prolonged. In patients with Wolff-Parkinson-White syndrome, RYTHMOL immediate-release  
426 tablets reduce conduction and increase the effective refractory period of the accessory pathway  
427 in both directions.

428 **Electrocardiograms:** Propafenone prolongs the PR and QRS intervals. Prolongation of  
429 the QRS interval makes it difficult to interpret the effect of propafenone on the QT interval.

430

431 **Table 1. Mean Change  $\pm$  SD in 12-Lead Electrocardiogram Results (RAFT)**

	<b>RYTHMOL SR Twice Daily Dosing</b>			<b>Placebo</b>
	225 mg	325 mg	425 mg	
	n=126	n=135	n=136	
PR (ms)	9 $\pm$ 22	12 $\pm$ 23	21 $\pm$ 24	1 $\pm$ 16
QRS (ms)	4 $\pm$ 14	6 $\pm$ 15	6 $\pm$ 15	-2 $\pm$ 12
Heart rate	5 $\pm$ 24	7 $\pm$ 23	2 $\pm$ 22	8 $\pm$ 27
QTc <sup>a</sup> (ms)	2 $\pm$ 30	5 $\pm$ 36	6 $\pm$ 37	5 $\pm$ 35

432 <sup>a</sup> Calculated using Bazett's correction factor

433

434 In RAFT [see *Clinical Studies (14)*], the distribution of the maximum changes in QTc  
435 compared to baseline over the study in each patient was similar in the RYTHMOL SR 225 mg  
436 twice daily, 325 mg twice daily, and 425 mg twice daily and placebo dose groups. Similar results  
437 were seen in the ERAFT study.

438

439 **Table 2. Number of Patients According to the Range of Maximum QTc Change Compared**  
 440 **to Baseline Over the Study in Each Dose Group (RAFT Study).**

Range maximum QTc change	RYTHMOL SR			Placebo
	225 mg twice daily	325 mg twice daily	425 mg twice daily	
	N=119	N=129	N=123	N=100
	n (%)	n (%)	n (%)	n (%)
>20%	1 (1)	6 (5)	3 (2)	5 (4)
10-20%	19 (16)	28 (22)	32 (26)	24 (20)
0 ≤10%	99 (83)	95 (74)	88 (72)	91 (76)

441  
 442 **Hemodynamics:** Studies in humans have shown that propafenone exerts a negative  
 443 inotropic effect on the myocardium. Cardiac catheterization studies in patients with moderately  
 444 impaired ventricular function (mean C.I.=2.61 L/min/m<sup>2</sup>), utilizing intravenous propafenone  
 445 infusions (loading dose of 2 mg/kg over 10 min+ followed by 2 mg/min for 30 min) that gave  
 446 mean plasma concentrations of 3.0 µg/mL (a dose that produces plasma levels of propafenone  
 447 greater than does recommended oral dosing), showed significant increases in pulmonary  
 448 capillary wedge pressure, systemic and pulmonary vascular resistances and depression of cardiac  
 449 output and cardiac index.

450 **12.3 Pharmacokinetics**

451 **Absorption/Bioavailability:** Maximal plasma levels of propafenone are reached between  
 452 3 to 8 hours following the administration of RYTHMOL SR. Propafenone is known to undergo  
 453 extensive and saturable presystemic biotransformation which results in a dose and dosage form  
 454 dependent absolute bioavailability; e.g., a 150 mg immediate-release tablet had an absolute  
 455 bioavailability of 3.4%, while a 300 mg immediate-release tablet had an absolute bioavailability  
 456 of 10.6%. Absorption from a 300 mg solution dose was rapid, with an absolute bioavailability of  
 457 21.4%. At still larger doses, above those recommended, bioavailability of propafenone from  
 458 immediate-release tablets increased still further.

459 Relative bioavailability assessments have been performed between RYTHMOL SR  
 460 capsules and RYTHMOL immediate-release tablets. In extensive metabolizers, the  
 461 bioavailability of propafenone from the SR formulation was less than that of the immediate-  
 462 release formulation as the more gradual release of propafenone from the prolonged-release  
 463 preparations resulted in an increase of overall first pass metabolism [see *Metabolism*]. As a  
 464 result of the increased first pass effect, higher daily doses of propafenone were required from the  
 465 SR formulation relative to the immediate-release formulation, to obtain similar exposure to  
 466 propafenone. The relative bioavailability of propafenone from the 325 twice daily regimens of  
 467 RYTHMOL SR approximates that of RYTHMOL immediate-release 150 mg three times daily

468 regimen. Mean exposure to 5-hydroxypropafenone was about 20 to 25% higher after SR capsule  
469 administration than after immediate-release tablet administration.

470 Food increased the exposure to propafenone 4-fold after single dose administration of  
471 425 mg of RYTHMOL SR. However, in the multiple dose study (425 mg dose twice daily), the  
472 difference between the fed and fasted state was not significant.

473 Distribution: Following intravenous administration of propafenone, plasma levels decline  
474 in a bi-phasic manner consistent with a 2 compartment pharmacokinetic model. The average  
475 distribution half-life corresponding to the first phase was about 5 minutes. The volume of the  
476 central compartment was about 88 liters (1.1 L/kg) and the total volume of distribution about 252  
477 liters.

478 In serum, propafenone is greater than 95% bound to proteins within the concentration  
479 range of 0.5 to 2 µg/mL.

480 Metabolism: There are two genetically determined patterns of propafenone metabolism.  
481 In over 90% of patients, the drug is rapidly and extensively metabolized with an elimination half-  
482 life from 2-10 hours. These patients metabolize propafenone into two active metabolites: 5-  
483 hydroxypropafenone which is formed by CYP2D6 and N-depropylpropafenone  
484 (norpropafenone) which is formed by both CYP3A4 and CYP1A2. In less than 10% of patients,  
485 metabolism of propafenone is slower because the 5-hydroxy metabolite is not formed or is  
486 minimally formed. In these patients, the estimated propafenone elimination half-life ranges from  
487 10 to 32 hours. Decreased ability to form the 5-hydroxy metabolite of propafenone is associated  
488 with a diminished ability to metabolize debrisoquine and a variety of other drugs such as  
489 encainide, metoprolol, and dextromethorphan whose metabolism is mediated by the CYP2D6  
490 isozyme. In these patients, the N-depropylpropafenone metabolite occurs in quantities  
491 comparable to the levels occurring in extensive metabolizers.

492 As a consequence of the observed differences in metabolism, administration of  
493 RYTHMOL SR to slow and extensive metabolizers results in significant differences in plasma  
494 concentrations of propafenone, with slow metabolizers achieving concentrations about twice  
495 those of the extensive metabolizers at daily doses of 850 mg/day. At low doses the differences  
496 are greater, with slow metabolizers attaining concentrations about 3 to 4 times higher than  
497 extensive metabolizers. In extensive metabolizers, saturation of the hydroxylation pathway  
498 (CYP2D6) results in greater-than-linear increases in plasma levels following administration of  
499 RYTHMOL SR capsules. In slow metabolizers, propafenone pharmacokinetics is linear. Because  
500 the difference decreases at high doses and is mitigated by the lack of the active 5-  
501 hydroxymetabolite in the slow metabolizers, and because steady-state conditions are achieved  
502 after 4 to 5 days of dosing in all patients, the recommended dosing regimen of RYTHMOL SR is  
503 the same for all patients. The larger inter-subject variability in blood levels require that the dose  
504 of the drug be titrated carefully in patients with close attention paid to clinical and ECG evidence  
505 of toxicity [*see Dosage and Administration (2)*].

506 The 5-hydroxypropafenone and norpropafenone metabolites have electrophysiologic  
507 properties similar to propafenone *in vitro*. In man after administration of RYTHMOL SR, the 5-

508 hydroxypropafenone metabolite is usually present in concentrations less than 40% of  
509 propafenone. The norpropafenone metabolite is usually present in concentrations less than 10%  
510 of propafenone.

511 *Inter-Subject Variability:* With propafenone, there is a considerable degree of inter-  
512 subject variability in pharmacokinetics which is due in large part to the first pass hepatic effect  
513 and non-linear pharmacokinetics in extensive metabolizers. A higher degree of inter-subject  
514 variability in pharmacokinetic parameters of propafenone was observed following both single  
515 and multiple dose administration of RYTHMOL SR capsules. Inter-subject variability appears to  
516 be substantially less in the poor metabolizer group than in the extensive metabolizer group,  
517 suggesting that a large portion of the variability is intrinsic to CYP2D6 polymorphism rather  
518 than to the formulation.

519 *Stereochemistry:* RYTHMOL is a racemic mixture. The R- and S-enantiomers of  
520 propafenone display stereoselective disposition characteristics. *In vitro* and *in vivo* studies have  
521 shown that the R-isomer of propafenone is cleared faster than the S-isomer via the 5-  
522 hydroxylation pathway (CYP2D6). This results in a higher ratio of S-propafenone to R-  
523 propafenone at steady state. Both enantiomers have equivalent potency to block sodium  
524 channels; however, the S-enantiomer is a more potent  $\beta$ -antagonist than the R-enantiomer.  
525 Following administration of RYTHMOL immediate-release tablets or RYTHMOL SR capsules,  
526 the S/R ratio for the area under the plasma concentration-time curve was about 1.7. The S/R  
527 ratios of propafenone obtained after administration of 225, 325 and 425 mg RYTHMOL SR are  
528 independent of dose. In addition, no difference in the average values of the S/R ratios is evident  
529 between genotypes or over time.

530 Special Populations: *Hepatic Impairment:* Decreased liver function increases the  
531 bioavailability of propafenone. Absolute bioavailability assessments have not been determined  
532 for the RYTHMOL SR capsule formulation. Absolute bioavailability of RYTHMOL immediate-  
533 release tablets is inversely related to indocyanine green clearance, reaching 60-70% at clearances  
534 of 7 mL/min and below. Protein binding decreases to about 88% in patients with severe hepatic  
535 dysfunction. The clearance of propafenone is reduced and the elimination half-life increased in  
536 patients with significant hepatic dysfunction [*see Warnings and Precautions (5.9)*].

## 537 **13 NONCLINICAL TOXICOLOGY**

### 538 **13.1 Carcinogenesis, Mutagenesis, Impairment of Fertility**

539 Lifetime maximally tolerated oral dose studies in mice (up to 360 mg/kg/day, about twice  
540 the maximum recommended human oral daily dose [MRHD] on a mg/m<sup>2</sup> basis) and rats (up to  
541 270 mg/kg/day, about 3 times the MRHD on a mg/m<sup>2</sup> basis) provided no evidence of a  
542 carcinogenic potential for propafenone HCl.

543 Propafenone HCl tested negative for mutagenicity in the Ames (salmonella) test and in  
544 the *in vivo* mouse dominant lethal test. It tested negative for clastogenicity in the human  
545 lymphocyte chromosome aberration assay *in vitro* and in rat and Chinese hamster micronucleus

546 tests, and other *in vivo* tests for chromosomal aberrations in rat bone marrow and Chinese  
547 hamster bone marrow and spermatogonia.

548 Propafenone HCl, administered intravenously to rabbits, dogs, and monkeys, has been  
549 shown to decrease spermatogenesis. These effects were reversible, were not found following oral  
550 dosing of propafenone HCl, were seen at lethal or near lethal dose levels and were not seen in  
551 rats treated either orally or intravenously [*see Warnings and Precautions (5.13)*]. Treatment of  
552 male rabbits for 10 weeks prior to mating at an oral dose of 120 mg/kg/day (about 2.4 times the  
553 MRHD on a mg/m<sup>2</sup> basis) or an intravenous dose of 3.5 mg/kg/day (a spermatogenesis-impairing  
554 dose) did not result in evidence of impaired fertility. Nor was there evidence of impaired fertility  
555 when propafenone HCl was administered orally to male and female rats at dose levels up to  
556 270 mg/kg/day (about 3 times the MRHD on a mg/m<sup>2</sup> basis).

### 557 **13.2 Animal Toxicology and/or Pharmacology**

558 Renal and Hepatic Toxicity in Animals: Renal changes have been observed in the rat  
559 following 6 months of oral administration of propafenone HCl at doses of 180 and  
560 360 mg/kg/day (about 2 and 4 times, respectively, the MRHD on a mg/m<sup>2</sup> basis). Both  
561 inflammatory and non-inflammatory changes in the renal tubules, with accompanying interstitial  
562 nephritis, were observed. These changes were reversible, as they were not found in rats allowed  
563 to recover for 6 weeks. Fatty degenerative changes of the liver were found in rats following  
564 longer durations of administration of propafenone HCl at a dose of 270 mg/kg/day (about 3 times  
565 the MRHD on a mg/m<sup>2</sup> basis). There were no renal or hepatic changes at 90 mg/kg/day  
566 equivalent to the MRHD on a mg/m<sup>2</sup> basis).

## 567 **14 CLINICAL STUDIES**

568 RYTHMOL SR has been evaluated in patients with a history of electrocardiographically  
569 documented recurrent episodes of symptomatic AF in 2 randomized, double-blind, placebo  
570 controlled trials.

571 RAFT: In one US multicenter study (Rythmol SR Atrial Fibrillation Trial, RAFT), 3  
572 doses of RYTHMOL SR (225 mg twice daily, 325 mg twice daily and 425 mg twice daily) and  
573 placebo were compared in 523 patients with symptomatic, episodic AF. The patient population  
574 in this trial was 59% male with a mean age of 63 years, 91% White and 6% Black. The patients  
575 had a median history of AF of 13 months, and documented symptomatic AF within 12 months of  
576 study entry. Over 90% were NYHA Class I, and 21% had a prior electrical cardioversion. At  
577 baseline, 24% were treated with calcium channel blockers, 37% with beta blockers, and 38%  
578 with digoxin. Symptomatic arrhythmias after randomization were documented by transtelephonic  
579 electrocardiogram and centrally read and adjudicated by a blinded adverse event committee.  
580 RYTHMOL SR administered for up to 39 weeks was shown to prolong significantly the time to  
581 the first recurrence of symptomatic atrial arrhythmia, predominantly AF, from Day 1 of  
582 randomization (primary efficacy variable) compared to placebo, as shown in Table 3.

583

584 **Table 3: Analysis of Tachycardia-Free Period (Days) from Day 1 of Randomization**

Parameter	RYTHMOL SR Dose			Placebo (N = 126) n (%)
	225 mg twice daily (N = 126) n (%)	325 mg twice daily (N = 135) n (%)	425 mg twice daily (N = 136) n (%)	
Patients completing with terminating event <sup>a</sup>	66 (52)	56 (41)	41 (30)	87 (69)
Comparison of tachycardia-free periods				
Kaplan-Meier Media	112	291	NA <sup>b</sup>	41
Range	0 - 285	0 - 293	0 - 300	0 - 289
p-Value (Log-rank test)	0.014	<0.0001	<0.0001	--
Hazard Ratio compared to placebo	0.67	0.43	0.35	--
95% CI for Hazard Ratio	(0.49, 0.93)	(0.31, 0.61)	(0.24, 0.51)	--

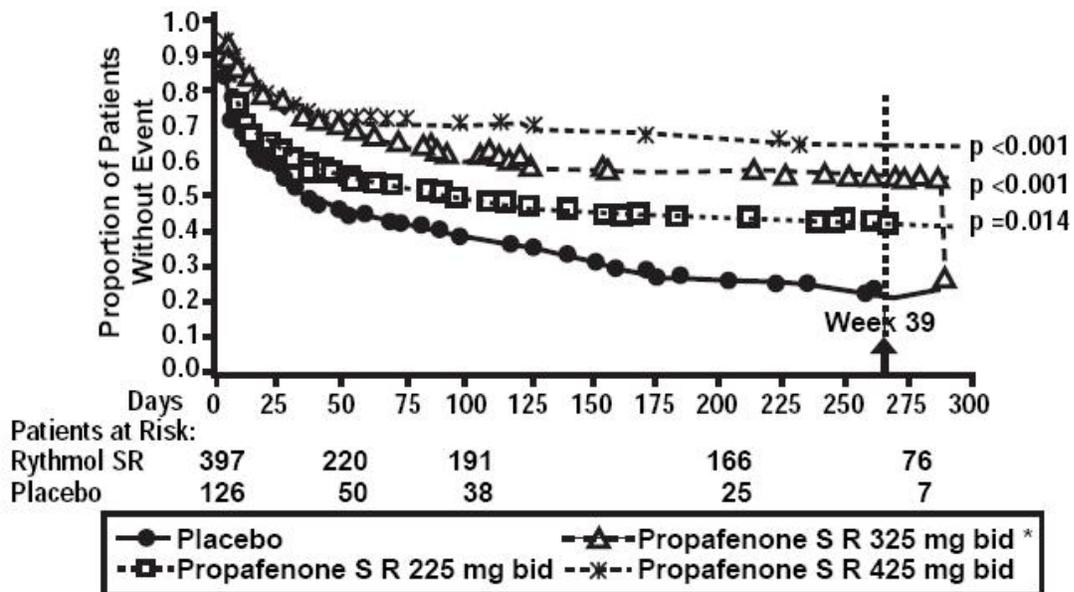
585 <sup>a</sup> Terminating events comprised 91% AF, 5% atrial flutter, and 4% PSVT.

586 <sup>b</sup> Not Applicable: Fewer than 50% of the patients had events. The median time is not calculable.

587  
588 There was a dose response for RYTHMOL SR for the tachycardia free period as shown in  
589 the proportional hazard analysis and the Kaplan-Meier curves presented in Figure 1.

590

591 **Figure 1: RAFT Kaplan-Meier Analysis for the Tachycardia-Free Period From Day 1 of**  
 592 **Randomization:**  
 593



\* Patient closeout started on Day 273 (week 39) and lasted until 300 days.  
 On day 291, of the 2 patients that were left on 325 mg, 1 had an event,  
 causing a 50% decline in the Kaplan-Meier curves

594  
 595  
 596 In additional analyses, RYTHMOL SR (225 mg twice daily, 325 mg twice daily, and  
 597 425 mg twice daily) was also shown to prolong time to the first recurrence of symptomatic AF  
 598 from Day 5 (steady-state pharmacokinetics were attained). The antiarrhythmic effect of  
 599 RYTHMOL SR was not influenced by age, gender, history of cardioversion, duration of AF,  
 600 frequency of AF or use of medication that lowers heart rate. Similarly, the antiarrhythmic effect  
 601 of RYTHMOL SR was not influenced by the individual use of calcium channel blockers, beta-  
 602 blockers or digoxin. Too few non-White patients were enrolled to assess the influence of race on  
 603 effects of RYTHMOL SR (propafenone hydrochloride).

604 No difference in the average heart rate during the first recurrence of symptomatic  
 605 arrhythmia between RYTHMOL SR and placebo was observed.

606 **ERAFT:** In a European multicenter trial [(European Rythmonorm SR Atrial Fibrillation  
 607 Trial (ERAFT)], 2 doses of RYTHMOL SR (325 mg twice daily and 425 mg twice daily) and  
 608 placebo were compared in 293 patients with documented electrocardiographic evidence of  
 609 symptomatic paroxysmal AF. The patient population in this trial was 61% male, 100% White  
 610 with a mean age of 61 years. Patients had a median duration of AF of 3.3 years, and 61% were  
 611 taking medications that lowered heart rate. At baseline, 15% of the patients were treated with  
 612 calcium channel blockers (verapamil and diltiazem), 42% with beta-blockers and 8% with  
 613 digoxin. During a qualifying period of up to 28 days, patients had to have 1 ECG-documented  
 614 incident of symptomatic AF. The double-blind treatment phase consisted of a 4 day loading

615 period followed by a 91-day efficacy period. Symptomatic arrhythmias were documented by  
616 electrocardiogram monitoring.

617 In ERAFT, RYTHMOL SR was shown to prolong the time to the first recurrence of  
618 symptomatic atrial arrhythmia from Day 5 of randomization (primary efficacy analysis). The  
619 proportional hazard analysis revealed that both RYTHMOL SR doses were superior to placebo.  
620 The antiarrhythmic effect of propafenone SR was not influenced by age, gender, duration of AF,  
621 frequency of AF or use of medication that lowers heart rate. It was also not influenced by the  
622 individual use of calcium channel blockers, beta-blockers or digoxin. Too few non-White  
623 patients were enrolled to assess the influence of race on the effects of RYTHMOL SR. There  
624 was a slight increase in the incidence of centrally diagnosed asymptomatic AF or atrial flutter in  
625 each of the 2 RYTHMOL SR treatment groups compared to placebo.

## 626 **16 HOW SUPPLIED/STORAGE AND HANDLING**

627 RYTHMOL SR (propafenone HCl) capsules are supplied as white, opaque, hard gelatin  
628 capsules containing either 225 mg, 325 mg, or 425 mg of propafenone HCl. The 225 mg strength  
629 is imprinted in red with GS EUG followed by 225. The 325 mg strength is imprinted in red with  
630 GS F1Y followed by 325, and also has a single red band around  $\frac{3}{4}$  of the circumference of the  
631 body. The 425 mg strength is imprinted in red with GS UY2 followed by 425, and also has three  
632 red bands around  $\frac{3}{4}$  of the circumference of the body.

633

Capsule Strength	60 count bottle NDC
225 mg	0173-0823-18
325 mg	0173-0824-18
425 mg	0173-0826-18

634

635 **Storage:** Store at 25°C (77°F); excursions permitted to 15° to 30°C (59° to 86°F). Dispense in a  
636 tight container.

## 637 **17 PATIENT COUNSELING INFORMATION**

638 See FDA-approved patient labeling (Patient Information).

### 639 **17.1 Information for Patients**

- 640
- 641 • Patients should be instructed to notify their health care providers of any change in over-the-  
642 counter, prescription and supplement use. The health care provider should assess the patients’  
643 medication history including all over-the-counter, prescription and herbal/natural  
644 preparations for those that may affect the pharmacodynamics or kinetics of RYTHMOL SR  
645 [see *Warnings and Precautions* (5.4)].
  - 646 • Patients should also check with their health care providers prior to taking a new over-the-  
counter medicine.

- 647 • If patients experience symptoms that may be associated with altered electrolyte balance, such  
648 as excessive or prolonged diarrhea, sweating, vomiting, or loss of appetite or thirst, these  
649 conditions should be immediately reported to their health care provider.  
650 • Patients should be instructed NOT to double the next dose if a dose is missed. The next dose  
651 should be taken at the usual time.

652

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654

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656

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658 Research Triangle Park, NC 27709

659

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661

662 RMS:7PI

663 PHARMACIST-DETACH HERE AND GIVE INSTRUCTIONS TO PATIENT

664 -----

665  
666 **PATIENT INFORMATION**  
667 **RYTHMOL SR® (RITH-Mall)**

668 **(propafenone hydrochloride) Extended-Release Capsules**  
669

670 Read this Patient Information Leaflet before you start taking RYTHMOL SR and each  
671 time you get a refill. There may be new information. This information does not take  
672 the place of talking with your doctor about your medical condition or your  
673 treatment.

674  
675 **What is RYTHMOL SR?**

676 RYTHMOL SR is a prescription medicine that is used:

- 677 • in certain people who have a heart rhythm disorder called atrial fibrillation (AF)
- 678 • to increase the amount of time between having symptoms of AF

679  
680 It is not known if RYTHMOL SR is safe and effective in children.

681  
682 **Who should not take RYTHMOL SR?**

683 Do not take RYTHMOL SR if you have:

- 684 • heart failure (weak heart)
- 685 • had a recent heart attack
- 686 • have a heart condition called Brugada Syndrome
- 687 • a heart rate that is too slow, and you do not have a pacemaker
- 688 • very low blood pressure
- 689 • certain breathing problems that make you short of breath or wheeze
- 690 • certain abnormal body salt (electrolyte) levels in your blood

691  
692 Talk to your doctor before taking RYTHMOL SR if you think you have any of the  
693 conditions listed above.

694  
695 **What should I tell my doctor before taking RYTHMOL SR?**

696 Before you take RYTHMOL SR, tell your doctor if you:

- 697 • have liver or kidney problems
- 698 • have breathing problems
- 699 • have symptoms including diarrhea, sweating, vomiting, or loss of appetite or  
700 thirst that are severe. These symptoms may be a sign of abnormal electrolyte  
701 levels in your blood.
- 702 • have myasthenia gravis
- 703 • have lupus erythematosus

- 704 • have been told you have or had an abnormal blood test called Antinuclear  
705 Antibody Test or ANA Test
- 706 • are pregnant or plan to become pregnant. It is not known if RYTHMOL SR will  
707 harm your unborn baby.
- 708 • are breastfeeding or plan to breastfeed. RYTHMOL SR can pass into your milk  
709 and may harm your baby. You and your doctor should decide if you will  
710 breastfeed or take RYTHMOL SR. You should not do both.
- 711 • have any other medical conditions

712

713 **Tell your doctor about all the medicines you take**, including prescription and  
714 non-prescription medicines, vitamins, and herbal supplements. RYTHMOL SR and  
715 certain other medicines can affect each other and cause serious side effects.  
716 RYTHMOL SR may affect the way other medicines work, and other medicines may  
717 affect how RYTHMOL SR works.

718

719 **Especially tell your doctor if you take:**

- 720 • amiodarone or other medicines for your abnormal heart beats
- 721 • an antidepressant medicine
- 722 • a medicine to treat anxiety
- 723 • ritonavir (for example, KALETRA<sup>®</sup>, NORVIR<sup>®</sup>) or saquinavir (for example,  
724 INVIRASE<sup>®</sup>)
- 725 • an antibiotic medicine
- 726 • ketoconazole (for example, NIZORAL<sup>®</sup>)
- 727 • digoxin (LANOXIN<sup>®</sup>)
- 728 • warfarin sodium (for example, COUMADIN<sup>®</sup>, JANTOVEN<sup>®</sup>)

729

730 Know the medicines you take. Keep a list of them to show your doctor and  
731 pharmacist when you get a new medicine.

732

733 **How should I take RYTHMOL SR?**

- 734 • Take RYTHMOL SR exactly as prescribed. Your doctor will tell you how many  
735 capsules to take and how often to take them.
- 736 • To help reduce the chance of certain side effects, your doctor may start you with  
737 a low dose of RYTHMOL SR, and then slowly increase the dose.
- 738 • Do not open or crush the capsule.
- 739 • You may take RYTHMOL SR with or without food.
- 740 • You should not drink grapefruit juice during treatment with RYTHMOL SR.
- 741 • If you miss a dose of RYTHMOL SR, take your next dose at the usual time. Do  
742 not take 2 doses at the same time.

- 743 • If you take too much RYTHMOL SR, call your doctor or go to the nearest hospital  
744 emergency room right away.  
745 • Call your doctor if your heart problems get worse.  
746

747 **What are possible side effects of RYTHMOL SR?**

748 **RYTHMOL SR can cause serious side effects including:**

- 749
- 750 • **New or worsened abnormal heart beats, that can cause sudden death**  
751 **or be life-threatening.** Your doctor may do an electrocardiogram (ECG or  
752 EKG) before and during treatment to check your heart for these problems.  
753
  - 754 • **New or worsened heart failure. Tell your doctor about any changes in**  
755 **your heart symptoms, including:**
    - 756 ○ any new or increased swelling in your arms or legs
    - 757 ○ trouble breathing
    - 758 ○ sudden weight gain
  - 759
  - 760 • **Effects on pacemaker function.** RYTHMOL SR may affect how an  
761 implanted pacemaker or defibrillator works. Your doctor should check how  
762 your pacemaker or defibrillator is working during and after treatment with  
763 RYTHMOL SR. They may need to be re-programmed.  
764
  - 765 • **Very low white blood cell levels in your blood (agranulocytosis).** Your  
766 bone marrow may not produce enough of a certain type of white blood cells  
767 called neutrophils. If this happens, you are more likely to get infections. Tell  
768 your doctor right away if you have any of these symptoms, especially during  
769 the first 3 months of treatment:
    - 770 ○ fever
    - 771 ○ sore throat
    - 772 ○ chills
  - 773
  - 774 • **Worsening of myasthenia gravis in people who already have this**  
775 **condition.** Tell your doctor about any change in your symptoms.  
776
  - 777 • **RYTHMOL SR may cause lower sperm counts in men.** This could affect  
778 the ability to father a child. Talk to your doctor if this is a concern for you.  
779

780 Common side effects of RYTHMOL SR include:

- 781 • dizziness  
782 • fast or irregular heart beats

- 783 • chest pain
- 784 • trouble breathing
- 785 • taste changes
- 786 • nausea
- 787 • tiredness
- 788 • feeling anxious
- 789 • constipation
- 790 • upper respiratory infection or flu
- 791 • swelling

792

793 Tell your doctor if you have any side effect that bothers you or that does not go  
794 away.

795 These are not all the possible side effects of RYTHMOL SR. For more information,  
796 ask your doctor or pharmacist.

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

799

#### 800 **How should I store RYTHMOL SR?**

- 801 • Store RYTHMOL SR at room temperature between 59°F to 86°F (15°C to 30°C).
- 802 • Keep the bottle tightly closed.

803

#### 804 **Keep RYTHMOL SR and all medicines out of the reach of children.**

805

#### 806 **General information about RYTHMOL SR**

807 Medicines are sometimes prescribed for conditions other than those described in  
808 patient information leaflets. Do not use RYTHMOL SR for a condition for which it  
809 was not prescribed by your doctor. Do not give RYTHMOL SR to other people, even  
810 if they have the same symptoms you have. It may harm them.

811

812 This leaflet summarizes the most important information about RYTHMOL SR. If you  
813 would like more information, talk with your doctor. You can ask your doctor or  
814 pharmacist for information about RYTHMOL SR that is written for healthcare  
815 professionals. For more information about RYTHMOL SR, call 1-888-825-5249.

816

#### 817 **What are the ingredients in RYTHMOL SR?**

818 Active Ingredient: Propafenone hydrochloride

819

820 Inactive Ingredients: Antifoam, gelatin, hypromellose, red iron oxide, magnesium  
821 stearate, shellac, sodium lauryl sulfate, sodium dodecyl sulfate, soy lecithin and  
822 titanium dioxide.

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827 affiliated with and do not endorse GlaxoSmithKline or its products.

828  
829 Manufactured for:  
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831  
832 **GlaxoSmithKline**  
833 Research Triangle Park, NC 27709  
834 Manufactured by:  
835 **Abbott Laboratories**  
836 North Chicago, IL 60064

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