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## Pronestyl advertisement.

[s.l.]: [s.n.], 1970

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# Effectiveness...

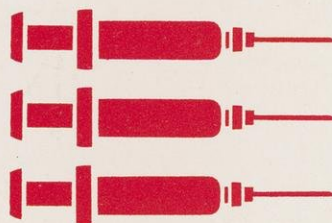
## I.V. Administration Guidelines for Premature Ventricular Contractions and Tachycardia

1. Preparation of drug: Dilute before I.V. use.
2. Usual dosage range: 200-1000 mg.
3. Infusion rate: Not to exceed 25-50 mg. per minute.  
Total I.V. dose not to exceed 1000 mg.
4. Precautionary measures:
  - a. Keep patient in supine position.
  - b. Monitor electrocardiographically and discontinue if myocardial toxicity is evidenced.
  - c. Measure blood pressure almost continuously and temporarily discontinue infusion if blood pressure falls more than 15 mm. Hg.



## When therapeutic blood levels are required quickly, I.V. Injections

100 mg. every 5 minutes until arrhythmia suppressed (up to a maximum dose of 1 gram).



For ventricular arrhythmias



# by a variety of routes

## I.V. Infusion

2-6 mg. per minute<sup>1</sup>  
(42.8  $\mu$ g./min./kg.)<sup>2</sup>

1. Wyman MG, Hammersmith L: Am J Cardiol 33:661-667, 1974
2. Bigger JT, Jr., Giardina EV: MCV Quart 9 (1): 65-76, 1973



**Terminate I.V. infusion  
4 hours before  
oral regimen begun.**



## Oral Administration Guidelines to Provide 50 mg. /kg./day\* for Ventricular Arrhythmias

Ventricular Tachycardia  
(give priming dose of 1 g. if patient has not received  
prior infusion)

Premature Ventricular Contractions



\*This dosage schedule is for use as a guide for treating the average patient, but all patients must be considered on an individual basis.

# Pronestyl<sup>®</sup>

(Procainamide Hydrochloride)

## through the entire therapeutic course

## PRONESTYL® TABLETS (Procainamide Hydrochloride Tablets)

The prolonged administration of procainamide often leads to the development of a positive anti-nuclear antibody (ANA) test with or without symptoms of lupus erythematosus-like syndrome. If a positive ANA titer develops, the benefit/risk ratio related to continued procainamide therapy should be assessed. This may necessitate considerations of alternative anti-arrhythmic therapy.

Pronestyl Tablets (Procainamide Hydrochloride Tablets) are veneer-coated tablets providing 250 mg., 375 mg., and 500 mg. procainamide hydrochloride.

**Contraindications:** In patients with myasthenia gravis and where a hypersensitivity to procainamide exists; bear in mind cross sensitivity to procaine and related drugs. Should not be given to patients with complete atrioventricular heart block. Contraindicated in cases of second degree and third degree A-V block unless an electrical pacemaker is operative.

**Administration:** Should procainamide therapy be continued for any appreciable period, electrocardiograms should be made occasionally to determine its further need.

**Precautions:** Evidence of untoward myocardial response should be carefully watched for in all patients. In the presence of myocardial damage with atrial fibrillation or flutter, the ventricular rate may increase suddenly as the atrial rate is slowed; adequate digitalization reduces but does not abolish this danger. Ventricular tachysystole is particularly hazardous if myocardial damage exists.

The dislodgement of mural thrombi producing an embolic episode may occur in correcting atrial fibrillation due to the forceful contractions of the atrium.

Extreme caution is required in attempting to adjust the heart rate when ventricular tachycardia has occurred during an occlusive coronary episode or where the use of procainamide may result in additional depression of conduction and ventricular asystole or fibrillation as in second degree and third degree A-V block, bundle branch block, or severe digitalis intoxication.

Bear in mind when treating ventricular arrhythmias in patients with severe organic heart disease and ventricular tachycardia that complete heart block, which may be difficult to diagnose, may be present. Since asystole may result if the ventricular rate is significantly slowed without attainment of regular atrioventricular conduction, procainamide should be stopped and the patient re-evaluated.

## PRONESTYL® INJECTION (Procainamide Hydrochloride Injection U.S.P.)

**Description:** Pronestyl Injection (Procainamide Hydrochloride Injection U.S.P.) is a sterile aqueous solution providing 100 mg. or 500 mg. procainamide hydrochloride per ml. The 100 mg./ml. potency contains 0.9% (w/v) benzyl alcohol and 0.09% sodium bisulfite as preservatives. The 500 mg./ml. potency contains 0.1% methylparaben and not more than 0.2% sodium bisulfite as preservatives.

**Contraindications:** In patients with myasthenia gravis and where a hypersensitivity to procainamide exists; cross sensitivity to procaine and related drugs must be borne in mind. Should not be given to patients with complete atrioventricular heart block. Contraindicated in cases of high-degree A-V block unless an electrical pacemaker is operative.

**Precautions:** Evidence of untoward myocardial response should be carefully watched for in all patients. In the presence of myocardial damage, procainamide may produce untoward responses. In atrial fibrillation or flutter, the ventricular rate may increase suddenly as the atrial rate is slowed; adequate digitalization reduces but does not abolish this danger. If myocardial damage exists, ventricular tachysystole is particularly hazardous. The dislodgement of mural thrombi producing an embolic episode may occur in correcting atrial fibrillation due to the forceful contractions of the atrium.

Extreme caution is required in attempting to adjust the heart rate when ventricular tachycardia has occurred during an occlusive coronary episode or where the use of procainamide may result in additional depression of conduction and ventricular asystole or fibrillation as in A-V block, bundle branch block, or severe digitalis intoxication.

Parenteral administration should be monitored electrocardiographically whenever practicable. Parenteral administration should be discontinued at once if electrocardiograms give evidence of impending heart block. This complication should be kept in mind when treating ventricular arrhythmias (especially parenterally) in patients with severe organic heart disease and ventricular tachycardia who may also have complete heart block. Since asystole may result if the ventricular rate is significantly slowed without attainment of regular atrioventricular conduction, procainamide should be stopped and the patient re-evaluated.

In the presence of both liver and kidney damage, normal dosage may produce symptoms of overdosage—principally ventricular tachycardia and severe hypotension.

A syndrome resembling lupus erythematosus has been reported with maintenance procainamide therapy. Common symptoms are polyarthralgia, arthritis and pleuritic pain. Fever, myalgia, skin lesions, pleural effusion and pericarditis may also occur. Rare cases of thrombocytopenia

or Coombs-positive hemolytic anemia, possibly related to this syndrome, have been reported. Measure anti-nuclear antibody titers at regular intervals in patients on procainamide for extended periods of time or in whom symptoms suggestive of lupus-like reaction appear; in event of rising titer (anti-nuclear antibody) or clinical symptoms of LE, assess the benefit/risk ratio related to continued procainamide therapy (see boxed Warning). Steroid therapy may be effective if discontinuation of procainamide does not cause remission of symptoms. If the syndrome develops in a patient with recurrent life-threatening arrhythmias not otherwise controllable, steroid-suppressive therapy may be used concomitantly with procainamide.

**Adverse Reactions:** Hypotension is rare with oral administration. Serious disturbances of cardiac rhythm such as ventricular asystole or fibrillation are more common with I.V. administration.

Large oral doses may sometimes produce anorexia, nausea, urticaria, and/or pruritus.

A syndrome resembling lupus erythematosus has been reported (see Precautions). Reactions consisting of fever and chills have been reported, including a case with nausea, vomiting, abdominal pain, acute hepatomegaly, and a rise in serum glutamic oxaloacetic transaminase following single doses of the drug. Agranulocytosis has been occasionally reported following repeated use of the drug, and deaths have occurred. Therefore, routine blood counts are advisable during maintenance procainamide therapy; and the patient should be instructed to report any soreness of the mouth, throat, or gums, unexplained fever or any symptoms of upper respiratory tract infection. If any of these symptoms should occur and leukocyte counts indicate cellular depression, procainamide therapy should be discontinued and appropriate treatment should be instituted immediately. Bitter taste, diarrhea, weakness, mental depression, giddiness, psychosis with hallucinations, and hypersensitivity reactions such as angioneurotic edema and maculopapular rash have been reported.

The package insert should be read carefully to become familiar with the recommended dosage for the indicated conditions and for full prescribing information.

**How Supplied:** Pronestyl Tablets (Procainamide Hydrochloride Tablets) providing 250 mg., 375 mg., and 500 mg. are available in bottles of 100.

or Coombs-positive hemolytic anemia, possibly related to this syndrome, have been reported. Measure anti-nuclear antibody titers at regular intervals in patients on procainamide for extended periods of time or in whom symptoms suggestive of lupus-like reaction appear; discontinue drug in event of rising titer or clinical symptoms of LE. Steroid therapy may be effective if discontinuation of procainamide does not cause remission of symptoms. If the syndrome develops in a patient with recurrent life-threatening arrhythmias not otherwise controllable, steroid-suppressive therapy may be used concomitantly with procainamide.

**Adverse Reactions:** Because procainamide is a peripheral vasodilator, I.V. administration may produce transient but at times severe hypotension particularly in conscious patients. I.M. injection is less likely to cause serious falls in blood pressure. Serious disturbances of cardiac rhythm such as ventricular asystole or fibrillation are also more common with I.V. administration.

A syndrome resembling lupus erythematosus has been reported. Reactions consisting of fever and chills including a case with fever and chills plus nausea, vomiting, abdominal pain, acute hepatomegaly, and a rise in SGOT following single doses of the drug have been reported. Bitter taste, diarrhea, weakness, mental depression, giddiness, psychosis with hallucinations, hypersensitivity reactions such as angioneurotic edema and maculopapular rash have been reported. Agranulocytosis has been occasionally reported following repeated use of the drug, and deaths have occurred; therefore, routine blood counts are advisable during maintenance therapy. If soreness of mouth, throat or gums, unexplained fever or any symptoms of upper respiratory tract infection should occur and leukocyte counts indicate cellular depression, procainamide therapy should be discontinued and appropriate treatment should be instituted immediately.

**Administration:** Oral administration is preferred. When parenteral therapy is necessary, intramuscular administration is the method of choice. *Intravenous use should be limited to extreme emergencies, the drug should be administered as a dilute infusion, and the patient should be monitored electrocardiographically.* The intravenous dose should not exceed 1 gram. Administer at a rate not exceeding 25 to 50 mg. per minute.

Should procainamide therapy be continued for any appreciable period, electrocardiograms should be made occasionally to determine its further need.

The package insert should be read carefully to become familiar with the recommended dosage for the indicated conditions.

**How Supplied:** Pronestyl Injection (Procainamide Hydrochloride Injection U.S.P.) is available in 10 ml. vials providing 100 mg./ml. and in 2 ml. vials providing 500 mg./ml. ©1974 E. R. SQUIBB & SONS, INC. 444-009