

## SUMMARY OF PRODUCT CHARACTERISTICS

### 1 TRADE NAME OF THE MEDICINAL PRODUCT

Penicillin VK Tablets B.P. 250 mg

### 2 QUALITATIVE AND QUANTITATIVE COMPOSITION

Each tablet contains 250 mg of phenoxymethylpenicillin as phenoxymethylpenicillin potassium Ph. Eur.

### 3 PHARMACEUTICAL FORM

Tablets

### 4 CLINICAL PARTICULARS

#### 4.1 THERAPEUTIC INDICATIONS

Recommended for use in the treatment of infections caused by susceptible organisms including Staphylococci, Pneumococci, Gonococci and Haemolytic Streptococci.

Consideration should be given to official guidance on the appropriate use of antibacterial agents.

Phenoxymethylpenicillin may be used for prophylaxis against streptococcal infections following rheumatic fever and against pneumococcal infections following splenectomy or in sickle cell disease.

Note: severe empyema, bacteraemia, pericarditis, meningitis and arthritis should not be treated with phenoxymethylpenicillin during the acute phase.

#### 4.2 POSOLOGY AND METHOD OF ADMINISTRATION

**Adults:** (including the elderly) 250mg to 500mg every six hours depending on the severity of the condition.

*Prophylaxis of rheumatic fever/chorea:* 250mg twice daily

*Prophylaxis of pneumococcal infection:* 500mg twice daily

**1 month to 1 year:** 62.5mg every six hours

**1 - 5 years:** 125mg every six hours.

**6 – 12 years:** 250mg every six hours

*Prophylaxis of rheumatic fever/chorea & pneumococcal infection:*

- Up to 6 years: 125mg twice daily
- 6-12 years: 250mg twice daily

Children with difficulty in swallowing or in children younger than 6 years of age, tablets are not usually administered. The more appropriate formulation for this age group should be used.

### **Renal impairment**

The dosage should be reduced if renal function is markedly impaired.

Ideally, each dose should be given half an hour before (or at least three hours after) a meal.

In patients with beta-haemolytic streptococcal infection it is usual to continue treatment at the full dosage for 10 days in order to minimise the occurrence of secondary complications such as acute nephritis and rheumatic fever.

For oral administration only

### **4.3 CONTRA-INDICATIONS**

Phenoxymethylpenicillin is contraindicated in patients known to be hypersensitive to Penicillin or any of the excipients contained in the product and should be used with caution in patients with known histories of allergy.

Penicillin VK Tablets BP contain lactose. Patients with rare hereditary problems of galactose intolerance, the Lapp lactase deficiency or glucose-galactose malabsorption should not take this medicine.

### **4.4 SPECIAL WARNINGS AND SPECIAL PRECAUTIONS FOR USE**

All degrees of hypersensitivity, including fatal anaphylaxis, have been observed with oral penicillin. Cross sensitivity may occur with cephalosporins and other beta lactam antibiotics. Enquiries should be made for such a history before therapy is begun. If any allergic reaction occurs, the drug should be discontinued and the patient treated appropriately.

Oral therapy should not be relied upon in patients with severe illness, or with nausea, vomiting, gastric dilation, achalasia or intestinal hypermotility. Occasionally, patients do not absorb therapeutic amounts of orally administered penicillin.

Administer with caution in the presence of markedly impaired renal function, due to the increased risk of encephalopathy.

Prolonged use of antibiotics may promote the over growth of non-susceptible organisms, including fungi. If super infection occurs, appropriate measures should be taken.

Streptococcal infections should be treated for a minimum of 10 days and post therapy cultures should be performed to confirm eradication of the organisms.

#### **4.5 INTERACTION WITH OTHER MEDICAMENTS AND OTHER FORMS OF INTERACTIONS**

Guar gum: Reduced absorption of phenoxymethylpenicillin.

Penicillins may interfere with anticoagulant control.

Probenicid: Reduces the excretion of phenoxymethylpenicillin by competing with it for renal tubular secretion.

Chloramphenicol, Erythromycin and Tetracyclines have been reported to antagonise the bacteriocidal activity of penicillins and concomitant use is not recommended.

Penicillin may reduce the efficacy of combined oral contraceptives.

The absorption of phenoxymethylpenicillin is reduced by neomycin

Methotrexate: Penicillins reduce excretion of methotrexate – increased risk of toxicity.

Sulfinpyrazone: Excretion of penicillins reduced by sulfinpyrazone

Typhoid vaccine (oral): Penicillins may inactivate oral typhoid vaccine

#### **4.6 PREGNANCY AND LACTATION**

The product should not be used during pregnancy unless considered essential by the physician. The product is excreted in breast milk, presenting the risk of candidiasis and also to central nervous system toxicity due to prematurity of the blood brain barrier. There is a theoretical possibility of later sensitization.

#### **4.7 EFFECTS ON ABILITY TO DRIVE AND USE MACHINES**

None stated

#### **4.8 UNDESIRABLE EFFECTS**

The most frequent side effects of oral penicillin are nausea, vomiting, abdominal discomfort, diarrhoea and coloration of the tongue (black hairy tongue).

Hypersensitivity reactions including skin eruptions (ranging from maculopapular to exfoliative dermatitis); urticaria; reactions resembling serum sickness, including chills, fever, oedema, arthralgia and prostration; laryngeal oedema and anaphylaxis. Fever and eosinophilia may frequently be the only reactions observed.

Neutropenia, thrombocytopenia, coagulation disorders and central nervous system toxicity including convulsions reported (especially with high doses or in severe renal impairment); paraesthesia with prolonged use; diarrhoea, and antibiotic-associated colitis.

Hepatitis and cholestatic jaundice reported very rarely.

#### **4.9 OVERDOSAGE**

**Signs and symptoms:** A large oral overdose of penicillin may cause nausea, vomiting, stomach pain, diarrhoea, and rarely, major motor seizures. If other symptoms are present, consider the possibility of an allergic reaction. Hyperkalaemia may result from over dosage, particularly in patients with renal insufficiency.

**Treatment:** No specific antidote is known. Symptomatic and supportive therapy is recommended. Activated charcoal with a cathartic, such as sorbitol may hasten drug elimination. Penicillin may be removed by haemodialysis.

### **5 PHARMACOLOGICAL PARTICULARS**

#### **5.1 PHARMACODYNAMIC PROPERTIES**

ATC Code: J01CE02

Phenoxymethylpenicillin is used in the treatment of infections caused by susceptible Staphylococci, Pneumococci, Gonococci and Haemolytic Streptococci. Unless very large doses are given, phenoxymethylpenicillin administered by mouth is less effective than parenterally administered benzylpenicillin in the treatment of severe acute infections. It is inactivated by penicillinase.

Mechanism of Action:

Phenoxymethylpenicillin acts through interference with the final stage of synthesis of the bacterial cell wall. The action depends on its ability to bind certain membrane-bound proteins, (penicillin-binding proteins or PBPs) that are located beneath the cell wall. These proteins are involved in maintaining cell wall structure, in cell wall synthesis and in cell division, and appear to possess transpeptidase and carboxypeptidase activity.

Bacterial surface enzymes called autolysins also appear to be involved in the lethal effect of penicillins, particularly for gram-positive bacteria. In gram-negative bacilli osmotic rupture of cells may occur when the cell wall is weakened. Phenoxymethylpenicillin can also produce morphological changes *in vitro* including the formation of long filaments or abnormally shaped cells. Bacteria that are not growing or dividing are generally not killed by phenoxymethylpenicillin.

Mechanism(s) of Resistance:

Phenoxymethylpenicillin is inhibited by penicillinase and other beta-lactamases that are produced by certain micro-organisms. The incidence of beta-lactamase producing organisms is increasing.

## **5.2 PHARMACOKINETIC PROPERTIES**

**ABSORPTION:** Rapidly but incompletely absorbed after oral administration; calcium and potassium salts are better absorbed than the free acid; Absorption appears to be reduced in subjects with coeliac disease; Absorption appears to be more rapid in fasting than in non-fasting subjects.

**BLOOD CONCENTRATION:** After an oral dose of 125mg peak serum concentration of 200 to 700ng/ml are attained in 2 hours. Peak plasma concentrations of 3 to 5ug per ml have been observed 30 to 60 minutes after a dose of 500mg.

**HALF-LIFE:** Biological half-life, about 30 minutes (increased to about 4 hours in renal failure)

**DISTRIBUTION:** Widely distributed throughout the body and enters pleural and ascitic fluids and also the cerebrospinal fluid when the meninges are inflamed; Phenoxymethylpenicillin crosses the placenta and is secreted in the milk; (Protein binding 50 to 80% bound plasma proteins)

**METABOLIC REACTIONS:** It is metabolised in the liver; several metabolites have been identified, including penicilloic acid. The unchanged drug and metabolites are eliminated rapidly in the urine, with minute concentrations excreted in bile.

**EXCRETION:** 20% - 35% of an oral dose is excreted in the urine in 24 hours.

## **5.3 PRECLINICAL SAFETY DATA**

No relevant information additional to that already contained elsewhere in the SPC.

# **6 PHARMACEUTICAL PARTICULARS**

## **6.1 LIST OF EXCIPIENTS**

Lactose B.P/Ph. Eur.  
Magnesium Stearate B.P/Ph. Eur.  
Purified Talc B.P/Ph. Eur.  
Maize Starch B.P/Ph. Eur.  
Ethanol B.P  
Purified Water B.P/Ph. Eur.

## **6.2 INCOMPATIBILITIES**

None stated

**6.3 SHELF LIFE**

36 months

**6.4 SPECIAL PRECAUTIONS FOR STORAGE**

Do not store above 25°C. Keep container tightly closed. Store in the original container.

**6.5 NATURE AND CONTENTS OF CONTAINER**

Tablet container with cap containing 15, 18, 20, 21, 28, 30 and 1000 tablets

**6.6 INSTRUCTIONS FOR USE/HANDLING**

None stated

**7 MARKETING AUTHORIZATION HOLDER**

ATHLONE LABORATORIES LIMITED  
BALLYMURRAY  
CO. ROSCOMMON  
IRELAND

**8 MARKETING AUTHORIZATION NUMBER**

PL 6453/0051

**9 DATE OF FIRST AUTHORISATION/RENEWAL OF AUTHORIZATION**

Date of first authorisation: 01 October 1998

Date of renewal of authorisation: pending

**10 DATE OF PARTIAL REVISION OF TEXT**

**28<sup>th</sup> October 2011**