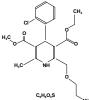


DESCRIPTION NORVASC® is the besylate salt of amlodipine, a long acting calcium channel blocker. NORVASC is chemically described as (R.S.) 3-ethyl-5 methyl-2-(2-aminoethoxymethyl)-4-(2-chlorophenyl)-1, 4 dihydro-6-methyl-3,5-pyridinedicarboxylate benzenesulpho nate. Its empirical formula is Ca₂₀H₂₅ClN₂O₅ • Ce₆H₆O₅S, and it structural formula is: ribed as (R.S.) 3-ethyl-5-)-4-(2-chlorophenyl)-1,4-arboxylate benzenesulpho- $_{25}CIN_2O_5 \bullet C_6H_6O_3S$, and its



NH. Amlodipine besylate is a white crystalline powder with a molecular weight of 567.1. It is slightly soluble in water and sparingly soluble in ethanol. NORVASC (amlodipine besylate) tablets are formulated as white tablets equiva-lent to 2.5, 5 and 10 mg of amlodipine for oral adminis-tration. In addition to the active ingredient, amlodipine besylate, each tablet contains the following inactive ingredients: microcrystalline cellulose, dibasic calcium phosphate anhydrous, sodium starch glycolate, and magnesium stearate.

magnesium stearate. CLINICAL PHARMACOLOGY Mechanism of Action: NORVASC is a dihydropyridine calcium antagonist (calcium ion antagonist or slow-channel blocker) that inhibits the transmembrane influx of calcium ions into vascular smooth muscle and cardiac muscle. Experimental data suggest that NORVASC binds to both dihydropyridine and nondihydropyridine binding sites. The contractile processes of cardiac muscle and vascular smooth muscle are dependent upon the move-ment of extracellular calcium ions into these cells through specific on channels. NORVASC inhibits cal-cium ion influx across cell membranes selectively, with a greater effect on vascular smooth muscle cells than on cardiac muscle cells. Negative inotropic effects can be detected *in vitro* but such effects have not been seen in intact animals at therapeutic doses. Serum calcium con-centration is not affected by NORVASC. Within the phys-iologic pH range, NORVASC is an ionized compound (KFaa-8.6), and its kinetic interaction with the calcium channel receptor is characterized by a gradual rate of association and dissociation with the receptor binding site, resulting in a gradual onset of effet. NORVASC is a peripheral arterial vascular smooth muscle to cause a reduction in peripheral vascular resistance and reduction in blood pressure. The precise mechanisms by which NORVASC relieves anicha we not been fully delineated, but are thought to clude the following: Extrinonal Angina: In patients with exertional angina, NORVASC reduces the total peripheral resistance (after-toad) against which the heart works and reduces the rate pressure product, and thus myocardial oxygen demand, uang oir experimental animal models and in human coronary arteries and Arterioles in response to calcium, potassium epinephrine, sertonini, and thromboxane A_a andog in experimental animal models and in human coronary atteries do the detabolism: After oral adminis-futation of therapeutic doses of NORVASC assorption produces peak plasma co

Pediatric Patients: Sixty-two hypertensive patients aged greater than 6 years received doses of NORVASC between 1.25 mg and 20 mg. Weight-adjusted clearance and vol-ume of distribution were similar to values in adults.

The production of the spectra of the second standard standard

effects on electrocardiographic parameters were observed. In clinical trials with angina patients alone, NORVASC therapy did not alter electrocardiographic intervals or produce higher degrees of AV blocks. Effects in Hypertension Adult Patients: The antihypertensive efficacy of NORVASC has been demonstrated in a total of 15 double-blind, placebo-controlled, randomized studies involving 800 patients on NORVASC and 538 on placebo. Once alily administration produced statistically significant placebo-corrected reductions in supine and standing blood pressures at 24 hours postdose, averaging about 12/6 mmHg in the standing position and 13/7 mmHg in the supine position in patients with mild to moderate hypertension. Maintenance of the blood pressure effect over the 24-hour dosing interval was observed, with little difference in peak and trough effect. Tolerance was not demonstrated in patients studied for up to 1 year. The 3 parallel, fixed dose, dose response studies showed dosing range. Effects on diastolic pressure were similar in young and older patients. The effect on systolic pressure was greater in older patients, perhaps because of greater baseline systolic pressure. Effects were similar in black patients and in white patients. **Pediatric Patients:** Two undred sixty-eight hyperten-sive patients aged 6 to 17 years were randomized first to NORVASC 2.5 or 5 mg once daily for 4 weeks and then vandomized again to the same dose or to placebo for another 4 weeks. Patients receiving 5 mg at the end of 8 weeks had lower blood pressure than those secondarily randomized to placebo. The magnitude of 8 weeks had lower blood spressure than those secondarily randomized to placebo. The sing douse. Adverse events were similar to those seen in adults. **Effects in Chronic Stable Angina:** The effectiveness of 5-10 mg/day of NORVASC 5 mg. NORVASC 10 mg. and averaged 9 patients (684 NORVASC, 554 placebo) with chronic stable 9 applients (684 NORVASC 5 mg. NORVASC 10 mg. and averaged 9 tients (684 NORVASC 5 mg. NORVASC 10 mg. and

INDICATIONS AND USAGE 1. Hypertension NORVASC is indicated for the treatment of hypertension. It may be used alone or in combination with other antihy-pertensive agents. 2. Chronic Stable Angina NORVASC is indicated for the treatment of chronic stable angina. NORVASC may be used alone or in combination with other antianginal agents. J. Vasospastic Angina (Prinzmetal's or Variant Angina) NORVASC is indicated for the treatment of confirmed or suspected vasospastic angina. NORVASC may be used as monotherapy or in combination with other antianginal drugs.

CONTRAINDICATIONS NORVASC is contraindicated in patients with known sen-sitivity to amlodipine.

WARNINGS Increased Angina and/or Myocardial Infarction: Ra patients, particularly those with severe obstructive e nary artery disease, have developed docume increased frequency, duration and/or severity of an or acute myocardial infarction on starting calcium o le blocker therapy or at the time of dosage increase mechanism of this effect has not been elucidated. nted ng ch ۱۵ TI

nel blocker therapy or at the time of dosage increase. The mechanism of this effect has not been elucidated. PRECAUTIONS General: Since the vasodilation induced by NORVASC is gradual in onset, acute hypotension has rarely been reported after oral administration of NORVASC. Nonetheless, caution should be exercised when administering NORVASC as with any other peripheral vasodilator particularly in patients with severe aortic stenosis. Use in Patients with Congestive Heart Failure: In general, calcium channel blockers should be used with caution in patients with heart failure. NORVASC (5-10 mg per day) has been studied in a placebo-controlled trial of 1159 patients with Aclass III or IV heart failure (See CLINICAL PHARMACDLOGY) on stable doses of ACE inhibitor, digoxin, and diuretics. Follow-ure was at least 6 months, with a mean of about 14 months. There was no overall adverse effect on survival or cardiac morbidity (as defined by life-threatening arrhythmia, acute myocardial infarction, or hospitalization for worsened heart failure, NORVASC is been compared to placebo in four 8-12 week studies of patients with NYHA class II/III heart failure, involving a total of 697 patients. In these studies, there was no evidence of worsened heart failure, symptoms, or LVEF. Beta-Blocker Withdrawal: NORVASC is not a beta-blocker and therefore gives no protection against the dangers of abrupt beta-blocker withdrawal; any such withdrawal should be by gradual reduction of the dose of beta-blocker.

blocker.

Patients with Hepatic Failure: Since NORVASC is exten-sively metabolized by the liver and the plasma elimination half-life (t 1/2) is 56 hours in patients with impaired hepatic function, caution should be exercised when administering NORVASC to patients with severe hepatic impairment.

lasma inu `n binding `n and PRECAUTIONS (continued) Drug Interactions: In vitro data in human plasma cate that NORVASC has no effect on the protein bi of drugs tested (digoxin, phenytoin, warfarin, ideamatheria) of drugs test indomethacin).

indomethacin). Special Studies: Effect of other agents on NORVASC. CIMETIDINE: Co-administration of NORVASC with cime-tidine did not alter the pharmacokinetics of NORVASC. GRAPEFRUIT JUICE: Co-administration of 240 mL of grapefruit juice with a single oral dose of amlodipine 10 mg in 20 healthy volunteers had no significant effect on the pharmacokinetics of amlodipine. MAALOX (antacid): Co-administration of the antacid MaALOX with a single dose of NORVASC. Rad no signifi-cant effect on the pharmacokinetics of NORVASC. SILDENAFIL: A single 100 mg dose of sidenafil

Maano which a single dose of involution fail where the pharmacokinetics of NORVASC. SILDENAFIL: A single 100 mg dose of sildenafil (Vigara@) in subjects with essential hypertension had no effect on the pharmacokinetic parameters of NORVASC. When NORVASC and sildenafil were used in combination, each agent independently exerted its own blood pressure lowering effect. Special Studies: Effect of NORVASC on other agents. ATORVASTATIN: Co-administration of multiple 10 mg doses of NORVASC with 80 mg of atorvastatin resulted in no significant change in the steady state pharmacoki-netic parameters of atorvastatin. DIGOXIN: Co-administration of NORVASC with digoxin did not change serum digoxin levels or digoxin renal clearance in normal voluniters. ETHANOL (alcohol): Single and multiple 10 mg doses of NORVASC had no significant effect on the pharmacoki-netics of ethanol. WARFARIN: Co-administration of NORVASC with warfarin

NORVASC had no significant effect on the pharmacoki-netics of ethanol. WARFARIN: Co-administration of NORVASC with warfarin did not change the warfarin prothrombin response time. In clinical trials, NORVASC has been safely adminis-tered with thiazide diuretics, beta-blockers, angiotensin-converting enzyme inhibitors, long-acting nitrates, sub-lingual nitroglycerin, digoxin, warfarin, non-steroidal anti-inflammatory drugs, antibiotics, and oral hypo-glycemic drugs. **Drug/Laboratory Tesl Interactions:** None known. **Carcinogenesis, Mutagenesis, Impairment of Fertility:** Rats and mice treated with amiodipine in the diet for two years, at concentrations calculated to provide daily dosage levels of 0.5, 1.25, and 2.5 mg/kq/day showed no evidence of carcinogenicity. The highest dose (for mice, similar to, and for rats twice" the maximum recommended clinical dose of 10 mg on a mg/m² basis) was close to the maximum tolerated dose for mice but not for rats. Mutagenicity studies revealed no drug related effects at either the gene or chromosome levels. There was no effect on the fertility of rats treated with amiodipine (males for 64 days and females 14 days prior to mating) at doses up to 10 mg/kg/day (8 times" the maximum recommended human dose of 10 mg on a mg/m² basis).

to mating) at doses up to 10 mg/kg/day (8 times' the maximum recommended human dose of 10 mg on a mg/m² basis). **Pregnancy Category C:** No evidence of teratogenicity or other embyo/felal toxicity was found when pregnant rats or rabbits were treated orally with up to 10 mg/kg amlodi-pine (respectively 8 times' and 23 times' the maximum recommended human dose of 10 mg on a mg/m² basis). during their respective periods of major organogenesis. However, litter size was significantly decreased (by about 50%) and the number of intrauterine deaths was significantly increased (about 5-fold) in rats adminis-tered 10 mg/kg amlodipine for 14 days before mating and throughout mating and gestation. Amlodipine has been shown to prolong both the gestation period and the duration of labor in rats at this dose. There are no ade-quate and well-controlled studies in pregnant vomen. Amlodipine should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus. "Based on patient weight of 50 kg.

potential benefit justimes the potential risk to the fetus. * Based on patient weight of 50 kg. Nursing Mothers: It is not known whether amlodipine is excreted in human milk. In the absence of this information, it is recommended that nursing be discontinued while NORVASC is administered. Pediatric Use: The effect of NORVASC on blood pres-sure in patients less than 6 years of age is not known. Geriatric Use: Clinical studies of NORVASC did not include sufficient numbers of subjects aged 65 and over to determine whether they respond differently from younger subjects. Other reported clinical experience has not identified differences in responses between the elderly and younger patients. In general, dose selection for an elderly patient should be cautious, usually starting at the low end of the dosing range, reflecting the greater frequency of decreased hepatic, renal, or cardiac func-tion, and of concomitant disease or other drug therapy. Elderly patients have decreased of AUC of approximately 40-60%, and a lower initial dose may be required (see DOSAGE AND ADMINISTRATION). ADVERSE REACTIONS

ADVERSE REACTIONS							
NORVASC has been evaluated for safety in more than							
11,000 patients in U.S. and foreign clinical trials. In gen-							
eral, treatment with NORVASC was well-tolerated at							
doses up to 10 mg daily. Most adverse reactions							
reported during therapy with NORVASC were of mild or							
moderate severity. In controlled clinical trials directly							
comparing NORVASC (N=1730) in doses up to 10 mg to							
placebo (N=1250), discontinuation of NORVASC due to							
adverse reactions was required in only about 1.5% of							
patients and was not significantly different from placebo							
(about 1%). The most common side effects are							
headache and edema. The incidence (%) of side effects							
which occurred in a dose related manner are as follows:							
Adverse	2.5 mg	5.0 mg	10.0 mg	Placebo			
Event	N=275	N=296	N=268	N=520			
Edema	1.8	3.0	10.8	0.6			
Dizziness	1.1	3.4	3.4	1.5			
Flushing	0.7	1.4	2.6	0.0			
Palpitation	0.7	1.4	4.5	0.6			

Other adverse experiences which were not c dose related but which were reported with an inci greater than 1.0% in placebo-controlled clinical include the following: clearly nciden trials

Placebo-Controlled Studies						
	NORVASC (%) (N=1730)	PLACEB0 (%) (N=1250)				
Headache	7.3	7.8				
Fatigue	4.5	2.8				
Nausea	2.9	1.9				
Abdominal Pain	1.6	0.3				
Somnolence	1.4	0.6				

For several adverse experiences that appear to be drug and dose related, there was a greater incidence in women than men associated with amlodipine treatment as shown in the following table:

as shown in the following table.							
	NORVASC		PLACEBO				
ADR	M=%	F=%	M=%	F=%			
	(N=1218)	(N=512)	(N=914)	(N=336)			
Edema	5.6	14.6	1.4	5.1			
Flushing	1.5	4.5	0.3	0.9			
Palpitations	1.4	3.3	0.9	0.9			
Somnolence	1.3	1.6	0.8	0.3			

Somnolence 1.3 1.6 0.8 0.3 The following events occurred in s1% but >0.1% of patients in controlled clinical trials or under conditions of open trials or marketing experience where a causal relationship is uncertain; they are listed to alert the physician to a possible relationship: Cardiovascular: arrhythmia (including ventricular tachy-cardia and atrial fibrillation), bradyzardia, chest pain, hypotension, peripheral ischemia, syncope, tachycardia, postural dizzineses, postural hypotension, vasculitis. Central and Peripheral Nervous System: hypoesthesia, neuropathy peripheral, paresthesia, tremor, vertigo. Gastrointestimal: anorexia, constipation, dysepsia;** dysphagia, diarrhea, flatulence, pancreatitis, vomiting, gingival hyperplasia.

gıngıval hyperplasıa. General: allergic reaction, asthenia,** back pain flushes, malaise, pain, rigors, weight gain, w decrease. weight

Musculoskeletal System: arthralgia, arthrosis, muscle cramps,* myalgia. Psychiatric: sexual dysfunction (male** and female), insomnia, nervousness, depression, abnormal dreams, anxiety, depersonalization.

anxiety, depersonalization. Respiratory System: dyspnea,** epistaxis. Skin and Appendages: angloedema, erythema multi-forme, pruritus,* rash;* rash erythematous, rash maculopapula: **These events occurred in less than 1% in placebo-controlled trials, but the incidence of these side effects was between 1% and 2% in all multiple dose studies. Second Genese: abnormal vision conjunctivitis. conjunctivitis

Special Senses: abnormal vision, conjunctivit diplopia, eye pain, tinnitus. Urinary System: micturition frequency, micturition di order, nocturia. Autonomic Nervous System: dry mouth, sweati increased.

increased. Metabolic and Nutritional: hyperglycemia, thirst. Hemopoietic: leukopenia, purpura, thrombocytopenia. The following events occurred in ≤0.1% of patients: cardiac failure, pulse irregularity, extrasystoles, skin dis-coloration, urticaria, skin dryness, alopecia, dermatitis, muscle weakness, twitching, ataxia, hypertonia, migraine, cold and clammy skin, apathy, agitation, anmesia, gastritis, increased appetite, loose stools, coughing, rhinitis, dysuria, polyuria, parosmia, taste perversion, abnormal visual accommodation, and xeroohthalmia.

perversion, abnormal visual accommodation, and xerophthalmia. Other reactions occurred sporadically and cannot be distinguished from medications or concurrent disease states such as myocardial infarction and angina. NORVASC therapy has not been associated with clini-cally significant changes in routine laboratory tests. No clinically relevant changes were noted in serum potas-sium, serum glucose, total triglycerides, total choles-terol, HDL cholesterol, uric acid, blood urea nitrogen, or creatinine.

SIUM, Seturn guest-treat, HDL Cholesterol, uric acid, blood urea murgun, e-creatinine. The following postmarketing event has been reported infrequently where a causal relationship is uncertain: gynecomastia. In postmarketing experience, jaundice and hepatic enzyme elevations (mostly consistent with cholestasis or hepatitis) in some cases severe enough to require hospitalization have been reported in association with use of amologipine. NORVASC has been used safely in patients with chronic obstructive pulmonary disease, well-compensated congestive heart failure, peripheral vascu-lar disease, diabetes mellitus, and ahormal lipid profiles.

compensated congestive heart failure, peripheral vascu-lar disease, diabetes mellitus, and abnormal lipid profiles. **OVERDOSAGE** Single oral doses of 40 mg/kg and 100 mg/kg in mice and rats, respectively, caused deaths. A single oral dose of 4 mg/kg or higher in dogs caused a marked peripheral vasodilation and hypotension. Overdosage might be expected to cause excessive peripheral vasodilation with marked hypotension and possibly a reflex tachycardia. In humans, experience with intentional overdosage of NORVASC is limited. Reports of intentional overdosage include a patient who ingested 250 mg and was asymptomatic and was not hospitalized; another (120 mg) was hospitalized, under-went gastric lavage and remained normotensive. The third (105 mg) was hospitalized and had hypotension (90/50 mmHg) which normalized following plasma expansion. A patient who took 70 mg amlodipine and an unknown quantity of benzodiazepine in a suicide attempt developed shock which was refractory to treatment and died the following day with abnormality high benzodi-azepine plasma concentration. A case of accidental drug overdose has been documente in a 19-month-old mag who ingested 30 mg amlodipine (about 2 mg/kg). During the emergency room presentation, vital signs were sta-ble with no evidence of hypotension, but a heart rate of 180 bpm. Ipecas was administered 3.5 hours after ingestion and subsequent observation (overnight) no sequelae were noted. If massive overdose should occur, active cardiac and respiratory monitoring should be instituted. Frequent

Ingestion and on subsequent bosic values (opermise) in sequelae were noted. If massive overdose should occur, active cardiac and respiratory monitoring should be instituted. Frequent blood pressure measurements are essential. Should hypotension occur, cardiovascular support including elevation of the extremities and the judicious administra-tion of fluids should be initiated. If hypotension remains unresponsive to these conservative measures, adminis-tration of vasopressors (such as phenylephrine) should be considered with attention to circulating volume and urine output. Intravenous calcium gluconate may help to reverse the effects of calcium entry blockade. As NORVASC is highly protein bound, hemodialysis is not likely to be of benefit. DISAGE AND ADMINISTRATION sequelae were If massive of

NORVASC is highly protein bound, hemodialysis is not likely to be of benefit. DOSAGE AND ADMINISTRATION Adults: The usual initial antihypertensive oral dose of NORVASC is 5 mg once daily with a maximum dose of 10 mg once daily. Small, fragile, or elderly individuals, or patients with hepatic insufficiency may be started on 2.5 mg once daily and this dose may be used when adding NORVASC to other antihypertensive therapy. Dosage should be adjusted according to each patient's need. In general, titration should proceed over 7 to 14 days so that the physician can fully assess the patient's response to each dose level. Titration may proceed more rapidly, however, if clinically warranted, provided the patient is assessed frequently. The recommended dose for chronic stable or vasospastic angina is 5-10 mg, with the lower dose sug-gested in the elderly and in patients with hepatic insuffi-ciency. Most patients will require 10 mg for adequate effect. See ADVERSE REACTIONS section for informa-tion related to dosage and side effects. **Children:** The effective antihypertensive oral dose in pediatric patients ages 6-17 years is 2.5 mg to 5 mg once daily. Doses in excess of 5 mg daily have not been studied in pediatric patients. See **CLINICAL PHARMACOLOSY. Co-administration with Other Antihypertensive and/or Antianginal Drugs:** NORVASC has been safely adminis-tered with thiazides, ACE inhibitors, bate-ablockers, long-acting nitrates, and/or sublingual nitroglycerin. **HOW SUPPLIED** NORVASC® – 2.5 mg Tablets (amlodipine besylate equiv-

Acting nitrates, and/or sublingual nitroglycerin. HOW SUPPLED NORVASC® – 2.5 mg Tablets (amlodipine besylate equiv-alent to 2.5 mg of amlodipine per tablet) are supplied as white, diamond, flat-faced, beveled edged engraved with "NORVASC" on one side and "2.5" on the other side and supplied as follows: NDC 0069-1520-68 Bottle of 90 NORVASC® – 5 mg Tablets (amlodipine besylate equiva-lent to 5 mg of amlodipine per tablet) are white, elon-gated octagon, flat-faced, beveled edged engraved with both "NORVASC" and "5" on one side and plain on the other side and supplied as follows: NDC 0069-1530-68 Bottle of 90 NDC 0069-1530-78 Bottle of 900 NDC 0069-1530-78 Bottle of 900 NDC 0069-1530-78 Dottle of 300 NORVASC® – 10 mg Tablets (amlodipine besylate equiva-lent to 10 mg of amlodipine per tablet) are white, round, flat-faced, beveled edged engraved with "NORVASC" and "0" on one side and plain on the other side and supplied as follows: NDC 0069-1530-72 Bottle of 900 NORVASC® – 10 mg Tablets (amlodipine besylate equiva-lent to 10 mg of amlodipine per tablet) are white, round, flat-faced, beveled edged engraved with "NORVASC" and "10" on one side and plain on the other side and supplied as follows: NDC 0069-1540-68 Bottle of 90

NDC 0069-1540-68 Bottle of 90 NDC 0069-1540-64 Unit Dose package of 100 Store bottles at controlled room temperature, 59° ti 69°F (15° to 30°C) and dispense in tight, light esistant containers (USP). to 86

Rx only

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