Undergraduate osteopathic medical education

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The American Osteopathic Association serves as the accrediting body for osteopathic medical education in the United States. All accreditation activities are conducted through the AOA Department of Education by the Bureau of Professional Education and its component groups. (For membership on these committees, see Appendix I, page 1403.)

The bureau is recognized by the US Office of Education as the official accrediting agency for osteopathic medical education. It reports to the AOA Board of Trustees and to appropriate government and nongovernment agencies.

The Committee on Colleges (COC), a subunit of the bureau, is responsible for inspecting all colleges of osteopathic medicine. The COC serves as the initial review level in the accreditation process. Based on the results of its reviews and on-site inspections, the COC makes recommendations to the bureau for approval or disapproval of accreditation status. It also serves as a consulting body should a college request advice on accreditation matters or educational management and policy.

The bureau in turn presents accreditation recommendations to the AOA Board of Trustees, to which it reports. In cases where a college may not agree with a recommendation, the Board serves as a final court of appeal.

The accreditation process involves the examination and evaluation of all aspects of a college of osteopathic medicine (COM), including organization, administration, and finance; faculty and instruction; student admissions, evaluation, and services; curriculum organization; and the nature of the COM's facilities.

Once accredited, a COM must undergo reevaluation approximately every five years to maintain its accredited status.

TABLE 1. FULL-TIME FACULTY ASSIGNMENTS, BY DISCIPLINE.*

Discipline	% of faculty assigned
General Practice/Family Medicine	18.4
Internal Medicine	10.2
Anatomy	7.4
Pediatrics	5.0
Microbiology	5.0
Physiology	4.9
Biochemistry	4.8
Pharmacology	4.2
Osteopathic Principles	4.1
Obstetrics/Gynecology	3.5
Pathology	2.9
General Surgery	2.8
Radiology	2.1
Other†	23.7

*Source: AACOM 1988 Statistical Report.

†Other disciplines to which 1% or more of full-time faculty were assigned include psychiatry, anesthesiology, emergency medicine, and orthopedic surgery.

TABLE 2. APPLICANTS TO AACOMAS OSTEOPATHIC MEDICAL SCHOOLS, ETHNIC GROUPS AND WOMEN BY ENTERING YEAR.*

Group	1976	1978	1980	1982	1984†	1985	1986	1987	1988
Black American	59	116	130	150	136	145	159	170	208
American Indian/Alaskan									
Native	14	18	15	16	27	21	31	19	20
Hispanic	33	38	76	128	140	170	164	165	153
Total underrepresented minority	106	172	221	294	303	336	354	354	381
Percent underrepresented minority	2.9	4.9	5.8	7.5	7.3	8.7	10.1	10.6	12.6
White, non-Hispanic	3,539	3,299	3,467	3,484	3,633	3,332	2,946	2,684	2,376
Asian American/Pacific Islander	62	59	98	139	190	201	215	288	273
Total all groups	3,707	3,530	3,786	3,917	4,126	3,869	3,515	3,326	3,030
Women	‡	610	804	965	1,168	1,102	1,010	1,002	966
Percent Women	‡	17.3	21.2	24.6	28.3	28.5	28.7	30.2	31.9

*Source: AACOM annual statistical report.

†Starting 1984, white non-Hispanic may include about 1% of applicants who did not provide ethnic identification.

‡Not available.

TABLE 3. NUMBER OF APPLICATIONS RECEIVED, FIRST-YEAR ENROLLMENT AND TOTAL ENROLLMENT BY SCHOOL.*

Colleges	1986-87			1987-88		
	Applications [†]	First-year enrollment	Total enrollment	Applications	First-year enrollment	Total enrollment
CCOM	1,650	108	420	722	108	393
COMP	1,057	103	410	947	103	411
COM-OSU	804	81	308	764	65	282
KCOM	1,313	137	529	1,201	133	526
MSU-COM	829	126	492	823	125	505
NYCOM	1,260	136	517	1,177	132	515
OUCOM	1,080	101	391	1,061	107	390
PCOM	1,019	209	816	925	204	814
SECOM	1,051	107	371	1,083	103	400
TCOM	1,058	103	376	810	103	385
UHS-COM	419	129	553	365	129	532
UMDNJ-SOM	872	66	220	772	59	220
UNECOM	1,145	74	286	1,057	80	287
UOMHS/COMS	1,551	179	717	1,393	178	693
WVSOM	926	65	234	926	63	233
Total	16,034	1,724	6,640	14,026	1,692	6,586

*Source: AACOM 1988 Annual Statistical Report.

[†]The number of applicants indicated above is not unduplicated, as in Table 2. The same applicant reported here may be listed by several schools.

Fig 1. Freshman enrollment, 1968-1987. (From AACOM 1988 Statistical Report.)

The Basic Standards for Accreditation are published annually in the *AOA Yearbook and Directory of Osteopathic Physicians* and also are available from the AOA Department of Education.

Currently, 15 fully accredited colleges of osteopathic medicine train future osteopathic physicians. (See Appendix II, page 1407.)

Faculty

According to statistics compiled by the American Association of Colleges of Osteopathic Medicine (AACOM) for 1987-1988, full-time professors, including associate and assistant professors, comprise 19.2% of faculty positions. Nearly 50% of the fac-

ulty volunteer their services, with the remainder being part-time, paid personnel.

As Table 1 illustrates, general practice/family medicine is the discipline most frequently taught by full-time academicians. From this group of instructors, 24.4% are board-certified specialists.

While the number of full-time MD faculty members held steady at approximately 14% during 1987-1988 from the previous year, those with at least a DO degree rose from about 72% to just over 74%.

Meanwhile, the number of PhD professors dropped from 11% to 8.2%.

Osteopathic medical students

Applicants

In 1987-1988, 3,996 candidates sought an osteopathic medical education, down from 4,328 applicants the year before. Table 2 indicates that increasing numbers of women and minorities comprise this population. Hispanic applications have more than quadrupled, while more than 3 times as many blacks applied in 1988 than in 1976. Nearly one-third of all 1988 applicants were women.

As Table 3 shows, the University of Osteopathic Medicine and Health Sciences College of Osteopathic Medicine and Surgery in Des Moines, Iowa, received the highest number of applications totaled for 1986-1987 and 1987-1988.

Enrollment

Freshmen enrollment dropped off slightly in 1987 after peaking at 1,750 students in 1984 (Fig 1). However, freshmen classes for the last two years have averaged just over 1,700 students.

Total enrollments and applicants for the past two years are listed by college in Table 3. Because a candidate might have applied to more than one college, the numbers may reflect duplicate applicants.

Minorities

As shown in Fig 2, the minority population has more than quadrupled since 1976, and accounts for 12.6% of freshmen. The 15 colleges of osteopathic medicine report 653 minority students comprise the total student body. Their distribution is outlined in Table 4.

Women

In 1968, only 2.8% of all osteopathic medical students were women. Twenty years later, that figure has climbed to 29% (Table 5.) As a result, more than one in four graduates is a woman. The Philadelphia College of Osteopathic Medicine and the University of Osteopathic Medicine and Health Sciences College of Osteopathic Medicine and Surgery in Des Moines have the largest female student populations.

Geographic source of entering students

Most students (62.1%) choose to attend the osteopathic medical school in their home state. The University of Medicine and Dentistry—New Jersey School of Osteopathic Medicine comes closest to being comprised solely of native students: Only 5% are from out of state (Table 6).

Fig 2. Percentages of ethnic enrollment. (From AACOM 1988 Statistical Report.)

TABLE 4. TOTAL ENROLLMENT OF MINORITY ETHNIC GROUPS, PERCENT BY SCHOOL.*

College	%	No. minority students
CCOM	9.2	36
COMOSU	13.5	38
COMP	16.8	69
KCOM	6.7	35
MSUCOM	15.8	80
NJSOM	12.3	27
NYCOM	11.5	59
OUCOM	11.0	43
PCOM	3.7	30
SECOM	14.0	56
TCOM	16.6	64
UNECOM	2.8	8
UOHS/COM	5.8	31
UOMHS/COM	8.4	58
WVSOM	8.2	19
All schools	10.42	653

*Source: AACOM 1988 Annual Statistical Report.

Financial reasons, family ties, and plans for establishing a practice where continuing education is less costly influenced the students' choice to remain in their home state.

Students admitted with advanced standing

The baccalaureate degree was the highest degree earned by 87.4% of the 1987 incoming freshmen, a small dip from 1986 levels in which nine out of ten freshmen held this degree. Those with a master's degree numbered 7.4%, similar to the previous year. Approximately 1.7% of students in the 1987 freshmen class earned the doctorate. Finally, those who completed approximately 75% of the cred-

TABLE 5. TOTAL NUMBER OF STUDENTS ENROLLED, BY SEX.*

College	Men	Women
CCOM	290	103
COMOSU	198	84
COMP	285	126
KCOM	412	114
MSUCOM	320	185
NYCOM	337	178
OUCOM	276	114
PCOM	556	258
SECOM	312	88
TCOM	280	105
UMDNJ-SOM	134	86
UNECOM	198	89
UOHS/COM	415	117
UOMHS/COM	497	196
WVSOM	172	61
Total	4,682	1,904

*Source: AACOM 1988 Statistical Report

its needed for an undergraduate degree made up 2.5% of first-year students. This marked a decline from 2.1% in 1986. The remaining 0.9% of students held other types of degrees.

Freshmen college record

The mean grade point average for first-year students in 1987 remained the same as the previous year—3.19. In 1987, MCAT average scores for each of the following disciplines were as follows: biology, 8.0; chemistry, 7.4; physics, 7.4; science, 7.3; reading, 7.4; and quantitative operations, 7.0. Almost no change was noted from the previous year's scores.

Student evaluation

Composite class rank, numerical rank, and letter grade determine student evaluation. AACOM reports nine colleges gauge student progress using results from the National Board Examinations. Three institutions require students pass Part I of the National Board Examinations for advancement or graduation; at least one requires a passing grade in Part II. Feedback from preceptors and hospital personnel provide further information concerning student performance.

Considering these criteria, AACOM reports only 2.2% of students withdrew or were dismissed from osteopathic medical colleges in 1987. Academic dif-

TABLE 6. NUMBER OF STATE RESIDENTS AND NONRESIDENTS ENROLLED, BY SCHOOL.*

College	Resident	Nonresident
CCOM	239	154
COMOSU	256	26
COMP	234	177
KCOM	99	427
MSUCOM	426	79
NYCOM	454	61
OUCOM	354	36
PCOM	614	200
SECOM	308	92
TCOM	357	28
UMDNJ-SOM	208	12
UNECOM	137	150
UOHS/COM	121	411
UOMHS/COM	145	566
WVSOM	149	84
Total	4,101	2,503

*Source: AACOM 1988 Statistical Report.

ficulty was the most cited reason for student attrition.

Osteopathic medical curriculum

Preparing the physicians of tomorrow for general practice of osteopathic medicine remains the colleges' primary goal. However, training in specialized medicine is not overlooked by any college of osteopathic medicine.

The DO degree is awarded after completion of a four-year curriculum. During the first two years, emphasis is placed on the basic sciences—anatomy, biochemistry, embryology, histology, immunology, microbiology, pathology, and physiology. Several colleges also offer introductory courses in clinical studies, such as general practice, neurology, obstetrics and gynecology, osteopathic manipulation, pediatrics, psychiatry, and surgery.

Geriatrics, nutrition, health promotion, drug therapy, bioethics and biomechanics are now incorporated into the osteopathic medical curriculum, as is computer use in medicine.

Clinical practice in the form of preceptorships, clerkships, and clinical rotations, occur in the third and fourth years.

Each college has a different policy concerning electives. Most schools permit taking electives during the third year, although a few colleges allow first year students to do so. Specialized or advanced training courses constitute acceptable electives.

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A summary follows:

TENORETIC (atenolol and chlorthalidone) is for the treatment of hypertension. It combines the antihypertensive activity of two agents: a beta₁-selective (cardioselective) hydrophilic blocking agent (atenolol, TENORMIN[®]) and a monosulfonamide diuretic (chlorthalidone).

Inactive ingredients: magnesium stearate, microcrystalline cellulose, povidone, sodium starch glycolate.

INDICATIONS AND USAGE: TENORETIC is indicated for the treatment of hypertension. This fixed-dose combination drug is not indicated for initial therapy of hypertension. If the fixed-dose combination represents the dose appropriate to the individual patient's needs, it may be more convenient than the separate components.

CONTRAINDICATIONS: TENORETIC is contraindicated in patients with: sinus bradycardia, heart block greater than first degree, cardiogenic shock, overt cardiac failure (see WARNINGS), anuria, hypersensitivity to this product or to sulfonamide-derived drugs.

WARNINGS: Cardiac Failure: Sympathetic stimulation is necessary in supporting circulatory function in congestive heart failure, and beta blockade carries the potential hazard of further depressing myocardial contractility and precipitating more severe failure. In hypertensive patients who have congestive heart failure controlled by digitalis and diuretics, TENORETIC should be administered cautiously. Both digitalis and atenolol slow AV conduction.

In Patients Without a History of Cardiac Failure: Continued depression of the myocardium with beta-blocking agents over a period of time can, in some cases, lead to cardiac failure. At the first sign or symptom of impending cardiac failure, patients receiving TENORETIC should be digitalized and/or be given additional diuretic therapy. Observe the patient closely. If cardiac failure continues despite adequate digitalization and diuretic therapy, TENORETIC therapy should be withdrawn.

Renal and Hepatic Disease and Electrolyte Disturbances: Since atenolol is excreted via the kidneys, TENORETIC should be used with caution in patients with impaired renal function.

In patients with renal disease, thiazides may precipitate azotemia. Since cumulative effects may develop in the presence of impaired renal function, if progressive renal impairment becomes evident, TENORETIC should be discontinued.

In patients with impaired hepatic function or progressive liver disease, minor alterations in fluid and electrolyte balance may precipitate hepatic coma. TENORETIC should be used with caution in these patients.

Ischemic Heart Disease: Although not yet reported with atenolol following abrupt cessation of therapy with certain beta-blocking agents in patients with coronary artery disease, exacerbations of angina pectoris and, in some cases, myocardial infarction have been reported. Therefore, such patients should be cautioned against interruption of therapy without the physician's advice. Even in the absence of overt angina pectoris, when discontinuation of TENORETIC is planned, the patient should be carefully observed and should be advised to limit physical activity to a minimum. TENORETIC should be reinstated if withdrawal symptoms occur.

Bronchospastic Diseases: PATIENTS WITH BRONCHOSPASTIC DISEASE SHOULD, IN GENERAL, NOT RECEIVE BETA BLOCKERS. Because of its relative beta₁-selectivity, however, TENORETIC may be used with caution in patients with bronchospastic disease who do not respond to, or cannot tolerate, other antihypertensive treatment. Since beta₁-selectivity is not absolute, the lowest possible dose of TENORETIC should be used and a beta₂-stimulating agent (bronchodilator) should be made available. If dosage must be increased, dividing the dose should be considered in order to achieve lower peak blood levels.

Anesthesia and Major Surgery: As with all beta-receptor blocking drugs, it may be decided to withdraw TENORETIC before surgery. In this case, 48 hours should be allowed to elapse between the last dose and anesthesia. If treatment is continued, care should be taken when using anesthetic agents because of the risk of further depression of the myocardium.

Beta blockers are competitive inhibitors of beta-receptor agonists and their effects on the heart can be reversed by administration of such agents, eg, dobutamine or isoproterenol with caution (see section on OVERDOSAGE). Manifestations of excessive vagal tone (eg, profound bradycardia, hypotension) may be corrected with atropine (1-2 mg IV).

Metabolic and Endocrine Effects: TENORETIC may be used with caution in diabetic patients. Beta blockers may mask tachycardia occurring with hypoglycemia, but other manifestations such as dizziness and sweating may not be significantly affected. Atenolol does not potentiate insulin-induced hypoglycemia and, unlike nonselective beta blockers, does not delay recovery of blood glucose to normal levels.

Insulin requirements in diabetic patients may be increased, decreased, or unchanged; latent diabetes mellitus may become manifest during chlorthalidone administration.

Beta-adrenergic blockade may mask certain clinical signs (eg, tachycardia) of hyperthyroidism. Abrupt withdrawal of beta blockade might precipitate a thyroid storm; therefore, patients suspected of developing thyrotoxicosis and from whom TENORETIC therapy is to be withdrawn should be monitored closely.

Because calcium excretion is decreased by thiazides, TENORETIC should be discontinued before carrying out tests for parathyroid function. Pathologic changes in the parathyroid glands, with hypercalcemia and hypophosphatemia, have been observed in a few patients on prolonged thiazide therapy; however, the common complications of hyperparathyroidism such as renal lithiasis, bone resorption, and peptic ulceration have not been seen.

Hyperuricemia may occur or acute gout may be precipitated in certain patients receiving thiazide therapy.

PRECAUTIONS, General—Electrolyte and Fluid Balance Status: Periodic determination of serum electrolytes to detect possible electrolyte imbalance should be performed at appropriate intervals.

Patients should be observed for clinical signs of fluid or electrolyte imbalance; ie, hyponatremia, hypochloremic alkalosis, and hypokalemia. Serum and urine electrolyte determinations are particularly important when the patient is vomiting excessively or receiving parenteral fluids. Warning signs or symptoms of fluid and electrolyte imbalance include dryness of the mouth, thirst, weakness, lethargy, drowsiness, restlessness, muscle pains or cramps, muscular fatigue, hypotension, oliguria, tachycardia, and gastrointestinal disturbances such as nausea and vomiting.

Hypokalemia may develop, especially with brisk diuresis, when severe cirrhosis is present, or during concomitant use of corticosteroids or ACTH.

Interference with adequate oral electrolyte intake will also contribute to hypokalemia. Hypokalemia can sensitize or exaggerate the response of the heart to the toxic effects of digitalis (eg, increased ventricular irritability). Hypokalemia may be avoided or treated by use of potassium supplements or foods with a high potassium content.

Any chloride deficit during thiazide therapy is generally mild and usually does not require specific treatment except under extraordinary circumstances (as in liver disease or renal disease). Dilutional hyponatremia may occur in edematous patients in hot weather; appropriate therapy is water restriction rather than administration of salt except in rare instances when the hyponatremia is life-threatening. In actual salt depletion, appropriate replacement is the therapy of choice.

Drug Interactions: TENORETIC may potentiate the action of other antihypertensive agents used concomitantly. Patients treated with TENORETIC plus a catecholamine depletor (eg, reserpine) should be closely observed for evidence of hypotension and/or marked bradycardia which may produce vertigo, syncope, or postural hypotension.

Thiazides may decrease arterial responsiveness to norepinephrine. This diminution is not sufficient to preclude the therapeutic effectiveness of norepinephrine. Thiazides may increase the responsiveness to tubocurarine.

Lithium generally should not be given with diuretics because they reduce its renal clearance and add a high risk of lithium toxicity. Read circulars for lithium preparations before use of such preparations with TENORETIC.

Should it be decided to discontinue therapy in patients receiving TENORETIC and clonidine concurrently, the TENORETIC should be discontinued several days before the gradual withdrawal of clonidine.

Other Precautions: In patients receiving thiazides, sensitivity reactions may occur with or without history of allergy or bronchial asthma. The possible exacerbation or activation of systemic lupus erythematosus has been reported. The antihypertensive effects of thiazides may be enhanced in the post-sympathectomy patient.

Carcinogenesis, Mutagenesis, Impairment of Fertility: Two long-term (maximum dosing duration of 18 or 24 months) rat studies and one long-term (maximum dosing duration of 18 months) mouse study with atenolol, each employing dose levels as high as 300 mg/kg/day or 150 times the maximum recommended human dose, did not indicate a carcinogenic potential in rodents.

Atenolol was negative in the mouse dominant lethal test, the Chinese hamster in vivo cytogenetic test and the Salmonella typhimurium back mutation test (Ames test), with or without metabolic activation.

Fertility of male or female rats (evaluated at dose levels as high as 200 mg/kg/day or 100 times the maximum recommended human dose) was unaffected by atenolol administration.

Use in Pregnancy: Pregnancy Category C. TENORETIC (atenolol and chlorthalidone) was studied for teratogenic potential in the rat and rabbit. Doses of 10, 100 and 300 mg/kg/day were administered orally to pregnant rats, with no teratologic effects observed. Two studies were conducted in rabbits. In the first study, pregnant rabbits were dosed with 10, 100 or 200 mg/kg/day. No teratologic changes were noted; embryonic resorptions were observed at all dose levels (ranging from approximately 5 times to 100 times the maximum recommended human dose). In a second rabbit study, dosages were 5, 10 and 25 mg/kg/day. No teratogenic or embryotoxic effects were demonstrated. It is concluded that the no-effect level for embryonic resorptions is 25 mg/kg/day (approximately 12.5 times the maximum recommended human dose) or greater. TENORETIC should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Atenolol—Atenolol has been shown to produce a dose-related increase in embryo/fetal resorptions in rats at doses equal to or greater than 50 mg/kg or 25 or more times the maximum recommended human dose. Although similar effects were not seen in rabbits, the compound was not evaluated in rabbits at doses above 25 mg/kg or 12.5 times the maximum recommended human dose. There are no adequate and well-controlled studies in pregnant women.

Chlorthalidone—Thiazides cross the placental barrier and appear in cord blood. The use of chlorthalidone and related drugs in pregnant women requires that the anticipated benefits of the drug be weighed against possible hazards to the fetus. These hazards include fetal or neonatal jaundice, thrombocytopenia, and possibly other adverse reactions which have occurred in the adult.

Nursing Mothers: It is not established to what extent this drug is excreted in human milk. Since most drugs are excreted in human milk, nursing should not be undertaken by mothers receiving TENORETIC.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS: TENORETIC is usually well tolerated in properly selected patients. Most adverse effects have been mild and transient. The adverse effects observed for TENORETIC are essentially the same as those seen with the individual components.

Atenolol: The frequency estimates that follow derive from controlled studies in which adverse reactions were either volunteered by the patient (US studies) or elicited, eg, by checklist (foreign studies). The reported frequency of elicited adverse effects was higher for both atenolol and placebo-treated patients than when these reactions were volunteered. Where frequency of adverse effects for atenolol and placebo is similar, causal relationship to atenolol is uncertain.

The data present these estimates in terms of percentages: first from the US studies (volunteered side effects) and then from both US and foreign studies (volunteered and elicited side effects):

US STUDIES (% ATENOLOL-% PLACEBO):

CARDIOVASCULAR: bradycardia (3%-0%), cold extremities (0%-0.5%), postural hypotension (2%-1%), leg pain (0%-0.5%)

CENTRAL NERVOUS SYSTEM/NEUROMUSCULAR: dizziness (4%-1%), vertigo (2%-0.5%), light-headedness (1%-0%), tiredness (0.6%-0.5%), fatigue (3%-1%), lethargy (1%-0%), drowsiness (0.6%-0%), depression (0.6%-0.5%), dreaming (0%-0%)

GASTROINTESTINAL: diarrhea (2%-0%), nausea (4%-1%)

RESPIRATORY (see WARNINGS): wheeziness (0%-0%), dyspnea (0.6%-1%)

TOTALS US AND FOREIGN STUDIES:

CARDIOVASCULAR: bradycardia (3%-0%), cold extremities (12%-5%), postural hypotension (4%-5%), leg pain (3%-1%)

CENTRAL NERVOUS SYSTEM/NEUROMUSCULAR: dizziness (13%-6%), vertigo (2%-0.2%), light-headedness (3%-0.7%), tiredness (26%-13%), fatigue (6%-5%), lethargy (3%-0.7%), drowsiness (2%-0.5%), depression (12%-9%), dreaming (3%-1%)

GASTROINTESTINAL: diarrhea (3%-2%), nausea (3%-1%)

RESPIRATORY (see WARNINGS): wheeziness (3%-3%), dyspnea (6%-4%)

MISCELLANEOUS: There have been reports of skin rashes and/or dry eyes associated with the use of beta-adrenergic blocking drugs. The reported incidence is small and, in most cases, the symptoms have cleared when treatment was withdrawn. Discontinuation of the drug should be considered if any such reaction is not otherwise explicable. Patients should be closely monitored following cessation of therapy.

Chlorthalidone: Cardiovascular: orthostatic hypotension; Gastrointestinal: anorexia, gastric irritation, vomiting, cramping, constipation, jaundice (intrahepatic cholestatic jaundice), pancreatitis, CNS: vertigo, paresthesias, xanthopsia; Hematologic: leukopenia, agranulocytosis, thrombocytopenia, aplastic anemia; Hypersensitivity: purpura, photosensitivity, rash, urticaria, necrotizing angitis (vasculitis, cutaneous vasculitis), Lyle's syndrome (toxic epidermal necrolysis); Miscellaneous: hyperglycemia, glycosuria, hyperuricemia, muscle spasm, weakness, restlessness. Clinical trials of TENORETIC conducted in the United States (89 patients treated with TENORETIC) revealed no new or unexpected adverse effects.

Potential Adverse Effects: In addition, a variety of adverse effects not observed in clinical trials with atenolol but reported with other beta-adrenergic blocking agents, should be considered potential adverse effects of atenolol. Nervous System: reversible mental depression progressing to cataplexy; hallucinations; an acute reversible syndrome characterized by disorientation for time and place, short-term memory loss, emotional lability, slightly clouded sensorium, decreased performance on neuropsychometric tests; Cardiovascular: intensification of AV block (see CONTRAINDICATIONS); Gastrointestinal: mesenteric arterial thrombosis, ischemic colitis; Hematologic: agranulocytosis, nonthrombocytopenic purpura, thrombocytopenic purpura; Allergic: erythematous rash, fever combined with aching and sore throat, laryngospasm and respiratory distress; Miscellaneous: reversible alopecia, Peyronie's disease.

There have been reports of a syndrome comprising psoriasisiform skin rash, conjunctivitis sicca, otitis, and sclerosing serositis attributed to the beta-adrenergic receptor blocking agent, practolol. This syndrome has not been reported with TENORETIC or TENORMIN (atenolol).

Clinical Laboratory Test Findings: Clinically important changes in standard laboratory parameters were rarely associated with the administration of TENORETIC. The changes in laboratory parameters were not progressive and usually were not associated with clinical manifestations. The most common changes were increases in uric acid and decreases in serum potassium.

DOSAGE AND ADMINISTRATION: Initial dose should be one TENORETIC 50 tablet once a day. If optimal response is not achieved, the dosage should be increased to one TENORETIC 100 tablet once a day. Package insert should be consulted for dosage adjustments in cases of severe impairment of renal function.

HOW SUPPLIED: TENORETIC 50 Tablets (atenolol 50 mg and chlorthalidone 25 mg), NDC 0310-0115 (white, round, biconvex, uncoated tablets with ICI on one side and 115 on the other side, bisected) are supplied in bottles of 100 tablets.

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