Human immunodeficiency virus disease training: A 'how to' guide

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As the HIV epidemic spreads throughout the United States, and as an increasing number of persons become infected with the virus and manifest its many complications, more and more physicians are being asked to give presentations on HIV disease to professional and community groups. This is especially true since AIDS education has become a primary prevention tool.

The author provides guidelines for giving a talk on AIDS. The general principles are applicable to presentations both to other health professionals and to lay-community groups. The outline can be varied, and the lecture material can be expanded or summarized to meet the needs of the particular audience. Sources for further information are also provided.

As the human immunodeficiency virus (HIV) epidemic spreads throughout the United States, more and more osteopathic physicians are being asked to give lectures on HIV diseases to various professional and community groups. For many physicians, these lectures have become a part of the regular routine. For

others, particularly those in rural areas, where the HIV epidemic has only recently gained attention, these lectures may be more novel experiences.

Although the number of HIV-infected patients being treated in osteopathic hospitals is increasing, many physicians have had as yet little or no experience with HIV patients. As more hospitals care for these patients, healthcare workers need to become educated about HIV disease. In the hospital setting, the osteopathic physician is frequently asked to give "grand rounds" for house staff, to conduct less formal training sessions for nurses and other staff members, or to educate kitchen or housekeeping employees about appropriate techniques.

With the increase in public interest in AIDS, osteopathic physicians are frequently being asked to give talks about AIDS at church groups, parent-school-association meetings, and other civic gatherings.

Many thoughts, fears, and feelings flash through a physician's mind on being asked to give his or her first presentation on AIDS. Generally, the first question to be dealt with is, should I say "Yes?" After that major step is taken, the presentation must be planned. In this paper nine guidelines are offered for planning a presentation on AIDS.

Clarify the purpose

The first step in planning a successful AIDS presentation is to clarify the purpose. Generally, the person extending the invitation has

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The ideas in this paper are those of the author, and not necessarily those of St Elizabeth's Hospital, the District of Columbia Commission on Mental Health, or the United States Department of Health and Human Services.

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a specific purpose in mind and some idea about the scope of the talk; these should be ascertained and discussed fully. For example, the purpose may be to train nurses or other staff members about the need for universal infection-control precautions, to help ward staff with psychosocial issues, or to give beginning interns an overview of the disease before they treat their first patients. Each of these presentations should have a different focus. The more information you have about the specific purpose of the talk, the more relevant your talk can become.

If other speakers will be presenting, it is also essential to have a clear idea of the objectives and content of their lectures; this will make it easier for you to prepare a complementary presentation to avoid unnecessary duplication.

Know the audience

Second, it is important to know who the audience will be. Will it consist of healthcare professionals or the general public? Will the healthcare group consist of intensive-care-unit nurses, surgical residents, or laboratory workers? Will the community group be a church organization, parent-teacher association, or some other group? If you know the general nature of the audience, you can plan an understandable seminar to meet its particular needs. In a speech to surgical residents, for example, such issues as infection control and surgical diagnoses would be of interest. In one to a local parent-teacher association, information about AIDS cases in children and adolescents, and about the routes of transmission within these age groups should be discussed.

The audience will determine the choice of words; medical terminology is appropriate for healthcare workers, but nontechnical terminology may be essential for a community group. Defining terms that may be unfamiliar to a given audience will make the lecture more comprehensible.

Knowledge about the audience will help you anticipate the type of questions that may be asked. Healthcare professionals are more likely to ask sophisticated clinical or policy questions, while a lay audience is more likely

to focus on issues raised in a recent newspaper article or on other information from the general media.

It is also helpful to find out the approximate size of the audience, since this will have a bearing on the type of presentation you plan. If the audience will be one of eight to ten persons who want to gather information, for example, the format may be an informal question-and-answer session. If it is to be a scientific seminar for 200 physicians, a very different and much more structured presentation will be appropriate.

Identify the topic

In the short span of about 8 years, the AIDS epidemic has grown from a syndrome whose name was recognized by only a few to an international problem affecting almost everyone. In today's world it is no longer possible to "tell all there is to know about AIDS in 1 hour." In preparing a talk on HIV disease, the subject must be carefully limited, with such factors as the purpose of the talk and the nature and size of the audience taken into consideration. Ideally, you should have a comprehensive understanding of the specific area chosen. Usually, the persons attending a meeting come with certain goals, often nonverbalized. The more you can meet these goals the more interested your audience will be.

The list of possible topics is endless. Tables 1 through 8 provide short outlines of possible topics. Each of these topics could be subdivided into several others. The level of the audience's knowledge about HIV disease will help determine how specific the presentation should be. Healthcare professionals are more likely to prefer a specialized presentation; a lay audience, a more general overview.

Make an outline

After a specific topic has been selected, a general outline of the presentation can be made. You should identify one to three important points and organize the presentation around them. A well-organized talk will keep listeners alert. A working outline will also serve as a guide for the literature search and other steps that follow.

Table 1
Topics for Presentation: Epidemiology of AIDS

- Case definition
 - What is HIV disease?
 - What is AIDS?
- Historical perspective, including epidemic curves
- Local and national surveillance data
 1. Groups at risk
 2. Routes of transmission
 3. Incidence and prevalence rates by geographic area
 4. Prognosis (case-fatality rates)

Table 2
Topics for Presentation: Medical Aspects

Signs and symptoms

- Early nonspecific signs and symptoms (weight loss, anorexia, fever, diarrhea, lymphadenopathy, etc)
- AIDS related complex (ARC) and other categories
- AIDS-related opportunistic infections and tumors

Diagnosis

- HIV antibody testing
- Indicators of immune status
- Opportunistic infections and tumors
- Other clinical aspects

Medical treatment

- AZT
- Experimental antivirals, immune modulators, etc
- Treatment of opportunistic infections and tumors

Natural history and prognosis

- HIV infection (asymptomatic)
- AIDS related complex
- AIDS case definition
- Various opportunistic infections and tumors

Table 3
Topics for Presentation: Neuropsychiatric Aspects of Patient Care

Direct neuropsychiatric complications of HIV infection

- Dementia
- Depression
- Other neurotropic effects

Neuropsychiatric sequelae of opportunistic infections and tumors

Treatment issues

- Antidepressants, anxiolytics, and other psychotropic drugs
- Psychotherapy (family, group, individual)
- Use of inpatient, outpatient, and home-care facilities

ning a series of articles on HIV disease, covering a range of topics.

Hospital infection control officers

Hospital infection control officers should be well versed in the transmission and prevention of HIV disease. They will have a copy of the current hospital infection control policies as well as an understanding of the issues immediately important to their institutions. They will also have copies of the Centers for Disease Control publication *Morbidity and Mortality Weekly Report (MMWR)*, which includes most national AIDS-prevention recommendations along with short articles on current AIDS-related topics. These articles are often used by newspapers to develop their stories.

Gay men's clinics

Many cities have a small health center, often a voluntary, nonprofit clinic, which provides care primarily to gay men. Most of these clinics were established to focus on the particular needs of gay men and have evolved into AIDS resource centers. They usually provide anonymous HIV testing, health education, and AIDS treatment or referral, or both. The clinics may also be the community focus for AIDS-counseling groups, AIDS hospices, AIDS "buddies," and other support services. Often they have informal libraries on AIDS-related topics and an assortment of brochures for the public. Their staff members are experts on available community resources.

Collect reference materials

Information on AIDS can be obtained from numerous sources. The type of presentation will determine the number and types of resources used. For a scientific presentation on HIV disease, a formal literature search (such as the computerized Medline search) may be needed. For an informal discussion, a quick review of your personal resource file may suffice. Several informational sources are listed in the following sections.

Osteopathic publications

Every osteopathic journal has had at least several articles on AIDS. Currently, JAOA is run-

*Evidence directly linking
elevated cholesterol and CAD
made you take a closer look
at lipid levels*

**BUT THERE'S
MORE...**

Lorelco is indicated for the reduction of elevated serum cholesterol in patients with primary hypercholesterolemia, as an adjunct to diet.

LOWERING ELEVATED MAY BE JUST

Lorelco (probucol) offers proven long- term cholesterol- lowering efficacy*

- Reduces total cholesterol by up to 27%^{1,2}
- Maintains lower levels, as proven over a 12-year period³
- Provides the assurance of extensive clinical experience

*The effect of probucol-induced reduction of serum cholesterol or triglyceride levels or reduction of HDL-cholesterol levels on morbidity or mortality due to coronary heart disease has not been established.

References: 1. S Afr Med J 1982;62:7-11. 2. Arch Intern Med 1981;141:1428-1432. 3. Data on file, MERRELL DOW PHARMACEUTICALS INC., Cincinnati, Ohio 45242-9553. 4. Am J Cardiol 1988;62:31B-36B. 5. Atherosclerosis 1986;62:209-217. 6. Proc Natl Acad Sci USA 1987;84:5928-5931. 7. J Clin Invest 1986;77:641-644. 8. Proc Natl Acad Sci USA 1987;84:7725-7729. 9. Am J Cardiol 1988;62:6B-12B. 10. Am J Cardiol 1986;57:16H-21H. 11. Am J Cardiol 1988;62:57B-59B. 12. Am J Cardiol 1988;62:66B-72B. 13. Am J Cardiol 1988;62:73B-76B. 14. Am J Cardiol 1988;62:52B-56B.

Lorelco affects cholesterol in unique ways†

- Inhibits the oxidative modification of LDL⁴⁻¹⁰
- Enhances HDL-mediated reverse cholesterol transport‡§

†Unique modes of action suggested by recent *in vitro* studies and human and/or animal *in vivo* data; clinical significance, however, is not yet established.

‡These effects of probucol on LDL- (increase in catabolic rate) and HDL-cholesterol may be linked to observed increased excretion of fecal bile acids, the final metabolic pathway for elimination of cholesterol from the body. (See Clinical Pharmacology.)

§The probable benefits obtained from LDL-cholesterol reduction must be weighed against the possible risk of a reduction in HDL-cholesterol when assessing the response of each patient receiving treatment with Lorelco. If satisfactory lipid alteration is not achieved, the drug should be discontinued. (See Precautions.)

LEVELS THE BEGINNING

LORELCO[®]

PROBUCOL

Lorelco provides important patient compliance benefits

- Convenient dosage—just one 500 mg tablet b.i.d. with meals
- Well tolerated—the most frequent side effect is loose stools, which occurs in about one in ten patients and generally subsides during continued therapy. See Prescribing Information for full discussion of side effects.
- Economical—can offer significant cost savings vs most other cholesterol-lowering therapies

Lorelco is not an innocuous drug and strict attention should be paid to the Indications, Contraindications, Warnings, and Precautions sections of Prescribing Information.

See Prescribing Information appearing on next page.

LORELCO[®]

PROBUCOL 500

500 mg tablets b.i.d. with meals

**TAKES YOU TO THE NEXT LEVEL
OF CHOLESTEROL CONTROL**

Merrell Dow U.S.A.

CAUTION: Federal law prohibits dispensing without prescription.

DESCRIPTION: Lorelco (probulcol) film-coated tablets for oral administration contain 250 mg or 500 mg of probucol per tablet. Each tablet also contains as inactive ingredients: corn starch, ethylcellulose, glycerin, hydroxypropyl cellulose, hydroxypropyl methylcellulose 2910, iron oxide, lactose, magnesium stearate, microcrystalline cellulose, polysorbate 80, talc, and titanium dioxide. Lorelco is an agent for the reduction of elevated serum cholesterol. The chemical name is 4,4'-(1-methyl-ethylidene)bis[thio]bis[2,6-bis(1,1-dimethyl-ethyl)phenyl]. Its chemical structure does not resemble that of any other available cholesterol-lowering agent. It is lipophilic.

CLINICAL PHARMACOLOGY: Lorelco lowers total serum cholesterol and has relatively little effect on serum triglycerides. Patients responding to probucol exhibit a decrease in low-density lipoprotein (LDL) cholesterol. Cholesterol is reduced not only in the LDL fraction, but also in the high-density lipoprotein (HDL) fraction with proportionately greater effect on the high-density portion. Epidemiologic studies have shown that both low HDL-cholesterol and high LDL-cholesterol are independent risk factors for coronary heart disease. The risk of lowering HDL-cholesterol while lowering LDL-cholesterol remains unknown. There is little or no effect reported on very low-density lipoprotein (VLDL).

Studies on the mode of action of Lorelco indicate that it increases the fractional rate of LDL catabolism. This effect may be linked to the observed increased excretion of fecal bile acids, a final metabolic pathway for the elimination of cholesterol from the body. Lorelco also exhibits inhibition of early stages of cholesterol biosynthesis and slight inhibition of absorption of dietary cholesterol. There is no increase in the cyclic precursors of cholesterol, namely desmosterol and 7-dehydrocholesterol. On this basis, it is concluded that Lorelco does not affect the later stages of cholesterol biosynthesis.

Absorption of Lorelco from the gastrointestinal tract is limited and variable. When it is administered with food, peak blood levels are higher and less variable. With continuous administration in a dosage of 500 mg b.i.d., the blood levels of an individual gradually increase over the first three to four months and thereafter remain fairly constant. In 116 patients treated with Lorelco for periods of three months to one year, the mean blood level was 23.8 ± 17.2 mcg/mL (± S.D.) ranging to 78.3 mcg/mL. Levels observed after seven years of treatment in 40 patients yielded an average value of 21.5 ± 16.5 mcg/mL (± S.D.) ranging to 62.0 mcg/mL. In a separate study in eight patients, blood levels averaged 19.0 mcg/mL at the end of 12 months of treatment. Six weeks after cessation of therapy, the average had fallen by 60%. After six months, the average had fallen by 80%.

In December 1984, a National Institutes of Health Consensus Development Conference Panel¹ concluded that lowering definitely elevated blood cholesterol levels (specifically blood levels of LDL-cholesterol) will reduce the risk of heart attacks due to coronary heart disease. The effect of probucol-induced reduction of serum cholesterol or triglyceride levels, or reduction of HDL-cholesterol levels on morbidity or mortality due to coronary heart disease has not been established.

INDICATIONS AND USAGE: Serious animal toxicity has been encountered with probucol. See WARNINGS and ANIMAL PHARMACOLOGY AND TOXICOLOGY sections. Probulcol is not an innocuous drug and strict attention should be paid to the INDICATIONS, CONTRAINDICATIONS, and WARNINGS.

Drug therapy should not be used for the routine treatment of elevated blood lipids for the prevention of coronary heart disease. Dietary therapy specific for the type of hyperlipidemia is the initial treatment of choice. Excess body weight may be an important factor and should be addressed prior to any drug therapy. Physical exercise can be an important ancillary measure. Contributory disease such as hypothyroidism or diabetes mellitus should be looked for and adequately treated. The use of drugs should be considered only when reasonable attempts have been made to obtain satisfactory results with nondrug methods. If the decision ultimately is to use drugs, the patient should be instructed that this does not reduce the importance of adhering to diet. The selection of patients for cholesterol-lowering drug therapy should take into account other important coronary risk factors such as smoking, hypertension, and diabetes mellitus. Consideration should be given to the efficacy, safety, and compliance factors for each of the cholesterol-lowering drugs prior to selecting the one most appropriate for an individual patient.

Lorelco may be indicated for the reduction of elevated serum cholesterol in patients with primary hypercholesterolemia (Types IIa and IIb hyperlipoproteinemia),² whose elevated LDL-cholesterol has not responded adequately to diet, weight reduction, and control of diabetes mellitus. Lorelco may be useful to lower elevated LDL-cholesterol that occurs in those patients with combined hypercholesterolemia and hypertriglyceridemia (Type IIb) due to elevation of both LDL and VLDL, but it is not indicated where hypertriglyceridemia is the abnormality of most concern. After establishing that the elevation in serum total cholesterol represents a primary lipid disorder, it should be determined that patients being considered for treatment with Lorelco have an elevated LDL-cholesterol as the cause for an elevated total serum cholesterol. This may be particularly relevant for patients with elevated triglycerides or with markedly elevated HDL-cholesterol values, where non-LDL fractions may contribute significantly to total cholesterol levels without apparent increase in cardiovascular risk. In most patients, LDL-cholesterol may be estimated according to the following equation:

$$\text{LDL-cholesterol} = \text{Total cholesterol} - [(0.16 \times \text{triglycerides}) + \text{HDL-cholesterol}]$$

When total triglycerides are greater than 400 mg/dL, this equation is less accurate. In such patients, LDL-cholesterol may be obtained by ultracentrifugation.

It is not always possible to predict from the lipoprotein type or other factors which patients will exhibit favorable results. Lipid levels, including HDL-cholesterol, should be periodically assessed.

The effect of probucol-induced reduction of serum cholesterol or triglyceride levels, or reduction of HDL-cholesterol levels on morbidity or mortality due to coronary heart disease has not been established.

CONTRAINDICATIONS: (See also WARNINGS and PRECAUTIONS.) Lorelco is contraindicated in patients who are known to have a hypersensitivity to it. Lorelco is contraindicated in patients with evidence of recent or progressive myocardial damage or findings suggestive of serious ventricular arrhythmias or with unexplained syncope or syncope of cardiovascular origin.

Lorelco is contraindicated in patients with an abnormally long QT interval.

WARNINGS: SERIOUS ANIMAL TOXICITY HAS BEEN ENCOUNTERED WITH PROBUCOL IN RHESUS MONKEYS FED AN ATEROGENIC DIET AND IN BEAGLE DOGS. (See ANIMAL PHARMACOLOGY AND TOXICOLOGY SECTION.)

Prolongation of the QT interval can occur in patients on Lorelco. Serious arrhythmias have been seen in association with an abnormally long QT interval in patients on Lorelco alone and in patients on Lorelco and a concomitant antiarrhythmic drug. The following precautions are deemed prudent:

1. Patients should be advised to adhere to a low cholesterol, low fat diet at the start of treatment with Lorelco and throughout the treatment period.
2. An ECG should be done prior to starting treatment and repeated at appropriate intervals during treatment. If an abnormally long QT interval is observed, the possible benefits and risks should be carefully considered before making a decision to continue Lorelco.

Lorelco therapy should be discontinued or not started if the QT interval at an observed heart rate on a resting ECG is persistently more than one of the values listed below:

Observed Heart Rate (beats/min)	QT Interval in sec (15% above the upper limit of normal)*	
	Males	Females
40	0.56	0.58
50	0.52	0.53
60	0.48	0.50
70	0.45	0.47
80	0.43	0.44
86	0.42	0.43
92	0.40	0.41
100	0.39	0.40
109	0.37	0.38
120	0.36	0.36
133	0.34	0.35

*Values calculated from Burch GE, Winsor T. A primer of electrocardiography. Philadelphia, PA: Lea and Febiger; 1958; p. 272 (Table 6).

3. Patients developing unexplained syncope or syncope of cardiovascular origin should have Lorelco therapy discontinued and should have ECG surveillance.
4. Drugs that prolong the QT interval are more likely to be associated with ventricular tachycardia after:
 - a. An increase in the dose of the drug.
 - b. Addition of a second drug that prolongs the QT interval (including tricyclic antidepressants, class I and III antiarrhythmics, and phenothiazines).
 - c. Hypokalemia or hypomagnesemia.
 - d. Severe bradycardia due to intrinsic heart disease or drug effects on the atrial rate (beta-blockers) or AV block (dioxin).
 - e. Development of recent or acute myocardial infarction, ischemia, or inflammation.

The use of Lorelco in patients receiving any of these drugs should be based on the conclusion that alternate methods of hypocholesterolemic therapy are either ineffective or not tolerated, and the potential benefits of cholesterol lowering outweigh the risk of serious arrhythmia.

The following conditions should be resolved or corrected prior to initiation of therapy with Lorelco:

- a. Hypokalemia
- b. Hypomagnesemia
- c. Severe bradycardia due to intrinsic heart disease or drug effects on the atrial rate (beta-blockers) or AV block (dioxin).
- d. Recent or acute myocardial infarction, ischemia, or inflammation.

General: Before instituting therapy with Lorelco, adequate baseline studies should be performed to determine that the patient has persistently elevated total and LDL-cholesterol levels representing a primary lipid disorder, and that the increased cholesterol is not due to secondary conditions such as hypothyroidism, poorly controlled diabetes mellitus, obstructive liver disease, nephrotic syndrome, or dysproteinemias. Serum lipid levels, including HDL-cholesterol, should be determined after an overnight fast before treatment, during an adequate trial of diet and weight reduction therapy prior to addition of drug therapy, and periodically during combined diet and drug therapy, including assessment during the first several months of drug treatment. A favorable trend in lipid levels should be evident during the first three to four months of administration of Lorelco, and if satisfactory lipid alteration is not achieved, the drug should be discontinued. Lorelco lowers serum total and LDL-cholesterol, and also lowers HDL-cholesterol in most patients with elevated LDL-cholesterol. Epidemiologic studies within hypercholesterolemic populations have shown that serum HDL-cholesterol is an independent, inversely correlated, risk factor for coronary heart disease (see CLINICAL PHARMACOLOGY). Human studies which will attempt to confirm or deny the hypothesis that drug-induced alteration in HDL-cholesterol affects cardiovascular risk are currently under evaluation. It is not known whether Lorelco-induced reduction of serum HDL-cholesterol will affect cardiovascular risk since no long-term, controlled clinical trials of Lorelco for the prevention of coronary heart disease, similar to the LRC-CPPT² (see CLINICAL STUDIES), have been performed. The probable benefits obtained from LDL-cholesterol reduction must be weighed against the possible risk of a reduction in HDL-cholesterol when assessing the response of each patient receiving Lorelco treatment. If satisfactory lipid alteration is not achieved, the drug should be discontinued.

Information for Patients: The patient should be instructed to adhere to a prudent diet. Females should be cautioned against becoming pregnant for at least six months after discontinuing Lorelco and should not breast-feed their infants during therapy with Lorelco.

Laboratory Tests: The physician should schedule periodic blood lipid determinations and periodic ECGs. (See WARNINGS.) Elevations of the serum transaminases (SGOT, SGPT), bilirubin, alkaline phosphatase, creatine phosphokinase, uric acid, blood urea nitrogen, and blood glucose above the normal range were observed on one or more occasions in various patients treated with Lorelco. Most often these were transient and/or could have been related to the patient's clinical state or other modes of therapy. Although the basis for the relationship between Lorelco and these abnormalities is not firm, the possibility that some of these are drug related cannot be excluded. In controlled trials, the incidence of abnormal laboratory values was no higher in the patients treated with Lorelco than in the patients who received placebo. If abnormal laboratory tests persist or worsen, if clinical signs consistent with the abnormal laboratory tests develop, or if systemic manifestations occur, Lorelco should be discontinued.

Drug Interactions: The addition of clofibrate to Lorelco is not recommended, since the lowering effect on mean serum levels of either LDL or total cholesterol is generally not significantly additive and, in some patients, there may be a pronounced lowering of HDL-cholesterol.

Neither oral hypoglycemic agents nor oral anticoagulants affect the effect of Lorelco on serum cholesterol. The dosage of these agents is not usually modified when given with Lorelco.

Monkeys fed a high fat, high cholesterol diet admixed with probucol exhibited serious toxicity. (See WARNINGS and ANIMAL PHARMACOLOGY AND TOXICOLOGY sections.) Prolongation of the QT interval can occur in patients on Lorelco and serious arrhythmias have been seen in association with an abnormally long QT interval in patients on Lorelco. The addition of a second drug that prolongs the QT interval (including tricyclic antidepressants, class I and III antiarrhythmics, and phenothiazines) may increase the risk of serious arrhythmia. (See CONTRAINDICATIONS AND WARNINGS.)

Carcinogenesis, Mutagenesis, Impairment of Fertility
In chronic studies of two years' duration in rats, no toxicity or carcinogenicity was observed. These results are consistent with the lack of any adverse effect on fertility and the negative findings in tests for mutagenic activity in rats.

Pregnancy Teratogenic Effects
Pregnancy—Category B: Reproduction studies have been performed in rats and rabbits at doses up to 50 times the human dose, and have revealed no evidence of impaired fertility or harm to the fetus due to probucol. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed. Furthermore, if a patient wishes to become pregnant, it is recommended that the drug be withdrawn and birth control procedures be used for at least six months because of persistence of the drug in the body for prolonged periods. (See CLINICAL PHARMACOLOGY.)

Labor and Delivery: The effect of Lorelco on human labor and delivery is unknown.

Nursing Mothers: It is not known whether this drug is excreted in human milk, but it is likely, since such excretion has been shown in animals. It is recommended that nursing not be undertaken while a patient is on Lorelco.

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

diarrhea or loose stools, flatulence, abdominal pain, nausea, vomiting, indigestion, gastrointestinal bleeding

Cardiovascular
prolongation of the QT interval on ECG, syncope, ventricular arrhythmias (ventricular tachycardia, torsades de pointes, ventricular fibrillation), sudden death

Neurologic
headache, dizziness, paresthesia, insomnia, tinnitus, peripheral neuritis

Hematologic
eosinophilia, low hemoglobin and/or hematocrit, thrombocytopenia

Dermatologic
rash, pruritus, ecchymosis, petechiae, hyperhidrosis, fetid sweat

Genitourinary
impotency, nocturia

Ophthalmic
conjunctivitis, tearing, blurred vision

Endocrine
enlargement of multinodular goiter

Idiosyncrasies
observed with initiation of therapy and characterized by dizziness, palpitations, syncope, nausea, vomiting and chest pain

Other
diminished sense of taste and smell, anorexia, angioneurotic edema

DRUG ABUSE AND DEPENDENCE: No evidence of abuse potential has been associated with Lorelco, nor is there evidence of psychological or physical dependence in humans.

OVERDOSAGE: There is a single report of a 15-kg, three-year-old, male child who ingested 5 g of probucol. Emesis was induced by ipecac. The child remained well, apart from a brief episode of loose stools and flatulence. No specific information is available on the treatment of overdose with Lorelco and no specific antidote is available. Probulcol is not dialyzable. Treatment is symptomatic and supportive. Probulcol has shown no identifiable acute toxicity in mice and rats. In these animals the LD₅₀ (oral) is in excess of 5 g/kg of body weight.

DOSE AND ADMINISTRATION: For adult use only. The recommended and maximum dose is 1000 mg daily given in two divided doses of 500 mg each (two 250 mg tablets or one 500 mg tablet) with the morning and evening meals.

HOW SUPPLIED: 250 mg round, white, film-coated tablets imprinted with either the DOW diamond trademark over the code number 51 or LORELCO 250. Bottles of 120 (NDC 0068-0051-52).

500 mg capsule-shaped, white, film-coated tablets, marked LORELCO 500. Bottles of 100 (NDC 0068-0053-61).

Keep well closed. Store in a dry place. Avoid excessive heat. Dispense in well-closed light-resistant containers with child-resistant closure.

ANIMAL PHARMACOLOGY AND TOXICOLOGY: In rhesus monkeys, administration of probucol in diets containing unusually high amounts of cholesterol and saturated fat resulted in the death of four of eight animals after several weeks. Premortem syncope was frequently observed and was associated with a pronounced prolongation of the QT intervals (30 to 50% longer than that observed in untreated monkeys). Serum levels of probucol greater than 20 mcg/mL were generally associated with some prolongation in the QT interval in the above-mentioned animals. A 75 msec or greater interval was observed from control values was usually seen at 40 mcg/mL and higher. Blood levels in humans receiving Lorelco average approximately 20 mcg/mL and not uncommonly reach levels of 40 mcg/mL and higher. Rhesus monkeys fed normal (low fat) chow and receiving probucol three to thirty times the human dose equivalent achieved blood levels only one-third those of many human subjects. No adverse effects were detected in these monkeys over an eight-year period of continuous drug administration. In another study in rhesus monkeys, an atherogenic diet was fed for two years and daily treatment with probucol, separated in time from the atherogenic meal, was carried out during the second year. Serum probucol levels ranged 20 to 50 mcg/mL in five of ten monkeys, and less in the remaining animals. Marked prolongation of the QT_c interval in the ECG or syncope behavior was not observed over the entire one-year treatment period. Regression of gross aortic lesions comparable to that observed in a parallel group of monkeys receiving cholestyramine was seen in animals receiving probucol. It should be emphasized that both HDL-cholesterol and LDL-cholesterol were markedly reduced in this regression study. During the performance of a two-year chronic study involving 32 probucol-treated dogs (beagles), there were 12 fatalities.

Subsequent experiments have indicated that probucol sensitizes the canine myocardium to epinephrine, resulting in ventricular fibrillation in many dogs. Among the animal species in which probucol has been studied, the dog is peculiar with respect to the degree of sudden death and the sensitization of the myocardium to epinephrine. In contrast to findings in the dog, intravenous injections of epinephrine to probucol-treated monkeys did not induce ventricular fibrillation.

In other studies, monkeys were given probucol either before and after, or only after myocardial infarction was induced by coronary artery ligation. In these studies, there was no difference between probucol- and placebo-treated groups with respect to either survival or detailed blind quantitation of myocardial changes (gross and histopathologic).

Probulcol has shown no identifiable toxicity in mice and rats. In these animals, the LD₅₀ (oral) is in excess of 5 g/kg of body weight. In chronic studies of two years' duration in rats, no toxicity or carcinogenicity was observed.

From studies in rats, dogs, and monkeys, it is known that probucol accumulates slowly in adipose tissue. Approximately 90% of probucol administered orally is unabsorbed. For that which is absorbed, the biliary tract is the major pathway for clearance from the body and very little is excreted by way of the kidneys.

Myocardial injury was produced in various groups of rats by one of the following procedures: aortic coarctation, coronary ligation, or cobalt or isoproterenol injection. After probucol administration, no deleterious effects related to treatment occurred, as measured by survival and microscopic examination of myocardial damage.

Probulcol was administered to minipigs beginning ten days before ligation of coronary artery and continued for 60 days after surgery. Challenge with epinephrine at the end of 60 days failed to induce ventricular fibrillation in any of the coronary-ligated probucol-treated minipigs.

CLINICAL STUDIES: In a multicenter, randomized, double-blind study, the LRC-CPPT,² hypercholesterolemic patients treated with an oral bile acid sequestrant (cholestyramine) and a cholesterol-lowering diet experienced average total and LDL-cholesterol reductions greater than those obtained in the placebo group treated with diet alone. The cumulative seven-year incidence of the primary end point—combined incidence of definite CHD death and/or definite nonfatal myocardial infarction—was 7% in the cholestyramine group and 8.6% in the placebo group. This was a 19% reduction in risk (P less than 0.05, single-tail test) of the primary end point reflecting a 24% reduction in definite CHD death and a 19% reduction in nonfatal myocardial infarction.

The subjects included in the study were middle-aged men (35-59 years old) with serum cholesterol levels at least 265 mg/dL and no previous history of heart disease. It is not clear to what extent these findings can be extrapolated to other segments of the hypercholesterolemic population not studied.

The bile acid sequestrant, cholestyramine, was used in the above trial. Caution should be exercised in extrapolating these results to Lorelco since it differs from cholestyramine with regard to its mode of action, spectrum of cholesterol-lowering potency, effect on HDL-cholesterol, and possible toxicity. The effect of probucol-induced reduction of serum cholesterol levels on morbidity or mortality due to coronary heart disease has not been established.

1. Consensus Development Panel. Lowering blood cholesterol to prevent heart disease. *JAMA*. 1985; 253:2080-2086.
2. Fredrickson DS, Levy RI, Lees RS. Fat transport in lipoproteins—an integrated approach to mechanisms and disorders. *N Engl J Med*. 1967; 276:34-44.
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Product Information as of June, 1988

MERRELL DOW U.S.A.
Subsidiary of The Dow Chemical Company
Cincinnati, Ohio 45215

Merrell Dow U.S.A. 9-1419 (L0095)MDA067R May, 1989 Printed in U.S.A.

Table 4
Topics for Presentation: Substance Abuse

Intravenous drug use

- Epidemiology of AIDS among IV drug users
- Women and AIDS
- Children and AIDS
- Use of safe needles

Substance abuse

- Effects of substance abuse on immunity
- Cofactors to AIDS
- AIDS-related diagnostic and treatment issues
- Review of relationship of substance abuse to AIDS

Secondary effect of alcohol and/or drugs on HIV transmission

- Effects of intoxication on safe sex practices (include alcohol and other drugs)

Table 5
Topics for Presentation: Psychosocial Complications

- Social isolation and abandonment by family, friends, and significant others
- Changing body image and sexual issues
- Issues of death and dying
- Depression and suicide
- Discrimination (jobs, housing, etc)
- Prevention issues
- Management and treatment of psychosocial complications
 1. Pharmacologic (antidepressants, anxiolytics, neuroleptics)
 2. Psychotherapy (individual, group, family; supportive, insight-oriented, cognitive, etc)

Table 6
Topics for Presentation: Psychosocial Effects of Patient Care on Staff

- Staff attitudes toward groups at risk
- Staff stress in caring for dying patients
- Personal fears about job-related exposures

Table 7
Topics for Presentation: Infection Control Issues

- Routes of transmission
- Hospital policy, guidelines, and procedures
- Universal precautions
- Risks to healthcare workers caring for infected patients

Table 8
Topics for Presentation: Legal and Ethical Issues

- Right to treatment/obligation to care for AIDS patients
- Right to confidentiality/duty to warn
- HIV-infected healthcare workers—should they be allowed to practice?
- HIV infection as a disability
- Other legal and ethical issues

Local and state health departments

Health departments are a source for local and state epidemiologic data, such as total number of cases, risk-behavior characteristics, sex ratios, age distributions, etc. These departments also have access to national surveillance data from the Centers for Disease Control, which will make it possible to compare local data with national trends.

Local and state health departments often serve as clearing houses or lending libraries for other sources of information on HIV disease—videotapes, slide sets, etc.

Medical or hospital libraries

A hospital or medical library is one source for scientific journal articles. Many librarians can complete a computerized literature search to

provide an extensive bibliography on any specific AIDS-related subject. Such a search could take several days. Most libraries also participate in an interlibrary loan program, making it possible to order articles that are not immediately available. It may take 2 weeks or more to obtain articles ordered via interlibrary loans. There may be a user charge for the literature search or the interlibrary loans; alternatively, the cost of the services may be borne by the hospital or library.

Community library

The community library has books, pamphlets, and magazine articles containing AIDS information that is commonly available to the public. For most scientific presentations, however, this resource is of limited use.

Local newspaper articles

Reviewing local newspaper articles is an excellent way of finding out "current issues of concern," particularly those of a lay audience. After reading the articles, you may want to review relevant scientific literature to clarify (or correct) selected points.

Prepare talk

Several styles have evolved for preparing a talk. Many speakers, particularly those less familiar with the material, will write out their talks word for word. Others will prefer to use comprehensive outlines. Still others will use a combination of these techniques. Whatever the method, the specific content of the lecture should be clearly identified and an organized, logical format developed for its presentation. It is far better to be clear and concise and finish the talk a few minutes early than to prolong the talk when there is little more of value to say. Any extra time can be used for questions.

Develop audiovisual aids

Audiovisual aids are a critical component of an interesting presentation. For a formal presentation to a large audience, 35-mm slides work well. Slides can be expensive if made commercially, though many hospitals, colleges, and universities have special arrangements for producing them at a minimal fee or at no charge.

An overhead projector with transparencies can work well for groups of any size. The transparencies can be prepared ahead of time, with text and drawings. Special multicolored permanent marking pens are available for overhead slides. Erasable pens can be used to highlight certain areas during the presentation. Transparencies have several advantages: they are inexpensive and can be made without ancillary audiovisual services, and eye contact with the audience is easily maintained. Some modern copy machines can make overhead transparencies from drawings and other prepared material.

Other visual aids might include videotapes, movies, brochures, and tape recordings; the

range seems endless. Also, a simple outline of the presentation could be provided to each participant for note taking.

Give a good presentation

Many dos and don'ts have been given for making a good presentation. For example, you should view the audience as a group of friends, as persons who want to hear what you have to say. In a friendly ambience, you will be able to give your presentation without undue anxiety. Additional suggestions are given in Table 9.

Prepare for questions

The audience will appreciate time for questions and may even demand time if it is not scheduled. When AIDS is the topic, questions can be diverse. Even with a "scientific" audience of healthcare workers, questions can seem more emotional than scientific. Many controversies have surfaced with respect to the disease: the obligation to treat patients with any disease versus the right to refuse care; the right to demand HIV testing on each hospital admission versus voluntary consent; required HIV testing of physicians versus voluntary consent; confidentiality versus the duty to inform. These conflicting viewpoints are accompanied with emotions about the disease and the persons it most affects, gay men and intravenous drug users. With the increase in heterosexual transmission, the fears only grow stronger. AIDS hysteria can be real, and it may be reflected in the audience's questions.

Each of us has feelings about HIV disease. These may be very intense and even in direct opposition to the facts about the disease. Little is gained by a speaker's being defensive. In answering a question, a diplomatic response can be helpful, even if it does not address the issue in detail. Often those who ask questions are not so much asking questions as providing their own opinions on or their understanding of a particular topic. An appropriate response might be, "There are many perspectives," or "That is an interesting concept." In response to a question that is long or cumbersome or does not seem relevant to the audience, you

Table 9
Some Dos and Don'ts for HIV Disease Presentation

Dos

- Know your audience
- Make an outline
- Narrow topics to be included in presentation
- Be familiar with relevant current newspaper and journal articles
- Use readable audiovisual materials
- Look at your audience
- Keep within allotted time
- Allow time for questions
- Speak clearly and slowly
- Define terms audience may not know
- Summarize material

Don'ts

- Don't try to cover all aspects of subject
- Don't exceed allotted time
- Don't read long lists of numbers and statistics
- Don't mumble, do speak loudly
- Don't be too technical or too simplistic, aim to speak at audience's level of comprehension

might suggest, "Perhaps we can best talk about that after the presentation." This, however, will obligate you to stay afterward to discuss the issue. If you do not know the answer to a question, frequently the best response is, "I don't know." To this you could add an offer to find out the answer and contact the questioner, perhaps by making a short telephone call or sending the person a journal article.

Frequently, questions are related to a recent newspaper or journal article. Members of the audience may want an "expert opinion" (your opinion) on something they have read or heard. A familiarity with current newspaper and journal articles will help you to clarify these issues for the audience.

Conclusions

As AIDS education continues to be the primary means of controlling the spread of the epidemic, osteopathic physicians will increasingly be asked to give presentations on HIV disease. The general guidelines offered in this paper will help you to prepare for an AIDS presentation.

Suggested readings

American Psychiatric Association: *The AIDS Primer*. Washington, DC, American Psychiatric Association, 1989.

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Gulick PG: Review of current therapy in human immunodeficiency viral infections. *JAOA* 1988;88:998-1002.

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Recommendations for prevention of HIV transmission in health care settings. *MMWR* 1987;36(suppl 2):1S-18S.

Revision of the CDC surveillance case definition for acquired immunodeficiency syndrome. *MMWR* 1987 (suppl 1):1S-15S.

Theriault RL: Acquired immune deficiency syndrome: An overview. *JAOA* 1988;88:109-113.

Update: Acquired immunodeficiency syndrome--United States, 1981-1988. *MMWR* 1989;38(14):229-236.

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