Family Practice Grand Rounds

The Far-Reaching Consequences of a Diagnosis

William A. Norcross, MD, Barbara Ryan, Nicole Chauche, MD, Theodore Ganiats, MD, Jean Nidorf, PhD, and Diane Mason, LCSW
San Diego, California

DR. WILLIAM NORCROSS *(Assistant Clinical Professor of Family Medicine)*: Although health care practitioners have long suspected that their interactions with patients have far-reaching implications, few data are available describing or quantitating these sequelae. A recent study demonstrated that absenteeism from work increased by 80 percent after the diagnosis of hypertension in male employees in an industrial setting.[1] Although hypertension is a common, highly treatable, and frequently symptomless disease, labeling people as hypertensive would appear to have a major impact on their productivity and possibly on their perception of personal health. The practitioner must be seriously concerned with the implications of diagnosis.

Perhaps, with a greater understanding of the effects of their interactions with patients, physicians will be better able to minimize the detrimental sequelae that often are inadvertently generated. Another recent article suggests that patients with nonspecific chest pain who receive an electrocardiogram and serum creatine phosphokinase test in addition to a history and physical examination have less short-term disability and perceive that they receive better medical care than patients upon whom diagnostic tests are not performed.[2]

I would now like to introduce Barbara Ryan, who will join me in the presentation and discussion of her medical illness and the effects that it had upon her life. Let me briefly present the story of her illness.

Barbara is a 34-year-old white married woman whom I saw at the Family Medical Center in June of 1980. At that time her chief complaint was that of a ten-day history of an intermittent tingling and numbness in the left upper extremity and left side

From the Department of Community and Family Medicine, University of California–San Diego, San Diego, California. Requests for reprints should be addressed to Dr. William A. Norcross, Department of Community and Family Medicine, UCSD Medical Center, H-652, 225 Dickinson Street, San Diego, CA 92103.

of her face. The symptoms began acutely when she was awakened by the onset of tingling in the left side of her face as well as pain, numbness, and weakness in her left arm. Over the course of the following day the symptoms gradually subsided, but she was left with intermittent numbness. She presented ten days after the onset of symptoms following another abrupt episode of numbness, weakness, and tingling identical to the first. There was no history of headache, nausea, vomiting, diabetes, heart disease, or intravenous drugs. At that time she smoked one pack of cigarettes daily and took a low-dose oral contraceptive. She was happily married, had no children, and administered an educational program for persons convicted of driving while intoxicated.

The physical examination revealed a pleasant, intelligent woman in no acute distress. Formal mental status examination was completely normal. Blood pressure was 118/80 mmHg and temperature was 99.2°F. The carotid pulse was 2+ bilaterally without bruits. The lungs were clear. First and second heart sounds (S_1 and S_2) were regular, and there was a grade 2/6 systolic ejection murmur at the left lower sternal border, but no click, gallop, or rub. There were no Roth spots, petechiae, or other evidence of embolic phenomena. Neurologic examination revealed a mild anisocoria, with the left pupil approximately 1 mm larger than the right. Cranial nerves were otherwise intact, as were visual fields. The patient experienced numbness in the left arm at the time of examination; however, this was difficult to demonstrate. Deep tendon reflexes, muscle strength and mass, gait, cerebellar function, stereognosis, and speech were normal. There was no palmar drift. Complete blood count, erythrocyte sedimentation rate, platelet count, VDRL, glucose, rheumatoid factor, antinuclear antibody, serum protein electrophoresis, thyroxine, vitamin B_{12} level, electroencephalogram, electrocardiogram, computerized axial tomographic study of the head, cardiac echogram, visual evoked responses, and auditory evoked responses were all normal.

The leading diagnosis was a small stroke secondary to oral contraception, but the differential diagnosis also included psychophysiologic reaction and multiple sclerosis. A neurological consultant concurred.

The oral contraceptives were discontinued immediately, and the patient was begun on aspirin, 10 grains twice daily. The patient was subsequently followed closely, and her symptoms continued to wax and wane for several weeks. During subsequent visits, much time was spent discussing the differential diagnosis, pathophysiology, and prognosis. Her symptoms gradually resolved.

Six months later she was seen again for fatigue and headache. Physical examination at that time revealed no abnormalities. On further questioning, it became apparent that the patient still had major concerns about her prior medical illness. Specifically, she was afraid that her headaches represented cerebrovascular disease, and that she might have a stroke and be an invalid for the remainder of her life. Further discussion revealed that her previous illness had a major impact on her life.

Barbara, it has been nearly two years since the onset of your first symptoms. You have had time to reflect upon all of the things that happened to you at that time and afterward. I wish that you would share some of your feelings about this illness and its impact on your life.

BARBARA RYAN: I clearly remember that my initial response was one of fear and uncertainty. It is terrifying to face the prospect of becoming an invalid for the remainder of your life. I also felt a great deal of frustration because the diagnosis was initially unclear, and to some degree remains so even to this day. This sense of frustration was also shared by my husband, who is a physicist. He is accustomed to dealing with highly quantifiable data and could not understand why a specific diagnosis could not be rendered, particularly in light of the sophisticated medical technology that was utilized in my diagnostic evaluation.

After the acute episode subsided, I continued to be concerned about my health, and maintained the fear that I could suddenly die or be paralyzed. I took far more aspirin than Dr. Norcross prescribed, 10 to 12 aspirin a day, which was clearly unlike me to do. Subsequently, headaches developed, which I attributed to impending stroke. I used more sick leave from work during this period than I ever did before in my life. Even when I went to work, my performance was diminished. Sitting at my desk, I would frequently develop headaches or feel "strange," and I would have to take a walk before being able to resume my work.

I thought a lot more about death, and I still do, but this has not been an entirely negative experi-

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ence. For one thing, I am more concerned about my health. I have almost stopped smoking, and plan to stop entirely in the near future. I take vitamins, get more exercise, and take more time out of life for myself. Along with a greater appreciation of my own mortality has come a greater appreciation of life. Now that I have confronted my own death, it is much easier for me to appreciate the simple pleasures of life.

DR. NICOLE CHAUCHE *(Second-Year Resident in Family Medicine)*: Dr. Norcross perceives that he spent a good deal of time discussing the illness with you. Do you share this perception? Ten or fifteen minutes of discussion may seem a lot to a physician, but may be insignificant to a patient who is ill.

MRS. RYAN: I believe the amount of time and effort that was given to me was more than adequate, but when one is nervous and afraid, one may not absorb very much information. Frequent visits at this time were helpful.

DR. CHAUCHE: Is there anything that you feel should have been done differently?

MRS. RYAN: Not really. Nothing can remove the terror of feeling that death or disability may be near at hand. I was frustrated at times because the results of the diagnostic studies seemed unclear to me, but by and large, communication was good. I feel that much of what I have experienced was unavoidable. In fact, participating in this conference is helping me to bring this entire thing to closure.

DR. THEODORE GANIATS *(Assistant Clinical Professor of Family Medicine)*: Often we encourage patients to call us with questions or concerns. Would this have been helpful for you?

MRS. RYAN: Dr. Norcross was very accommodating in that regard. He even gave me his home telephone number and encouraged me to call if any problems or questions developed. My inclination, however, is to stay away from the medical profession as much as possible. I was and probably still would be reluctant to call.

DR. JEAN NIDORF *(Assistant Clinical Professor of Family Medicine)*: If you were addressing the medical profession on the topic of sharing medical information with patients, what recommendations would you make to diminish the anxiety and frustration that frequently ensue?

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antihypertensive agents that cause renin release.

Agents Affecting Sympathetic Activity — The sympathetic nervous system may be especially important in supporting blood pressure in patients receiving captopril alone or with diuretics. Beta-adrenergic blocking drugs add some further antihypertensive effect to captopril, but the overall response is less than additive. Therefore, use agents affecting sympathetic activity (e.g., ganglionic blocking agents or adrenergic neuron blocking agents) with caution.

Agents Increasing Serum Potassium — Give potassium-sparing diuretics or potassium supplements only for documented hypokalemia, and then with caution, since they may lead to a significant increase of serum potassium.

Drug/Laboratory Test Interaction: Captopril may cause a false-positive urine test for acetone.

Carcinogenesis, Mutagenesis, and Impairment of Fertility: Two-year studies with doses of 50 to 1350 mg/kg/day in mice and rats failed to show any evidence of carcinogenic potential. Studies in rats have revealed no impairment of fertility.

Usage in Pregnancy: There are no adequate and well-controlled studies in pregnant women. Embryocidal effects were observed in rabbits. Therefore, captopril should be used during pregnancy only if the potential benefit outweighs the potential risk to the fetus.

Nursing Mothers: Captopril is secreted in human milk. Exercise caution when administering captopril to a nursing woman, and, in general, nursing should be interrupted.

Pediatric Use: Safety and effectiveness in children have not been established although there is limited experience with use of captopril in children from 2 months to 15 years of age. Dosage, on a weight basis, was comparable to that used in adults. Captopril should be used in children only if other measures for controlling blood pressure have not been effective.

ADVERSE REACTIONS: Reported incidences are based on clinical trials involving about 4000 patients.

Renal — One to 2 of 100 patients developed proteinuria (see WARNINGS). Renal insufficiency, renal failure, polyuria, oliguria, and urinary frequency in 1 to 2 of 1000 patients.

Hematologic — Neutropenia/agranulocytosis occurred in about 0.3% of captopril treated patients (see WARNINGS). Two of these patients developed sepsis and died.

Dermatologic — Rash (usually mild, maculopapular, rarely urticarial), often with pruritus and sometimes with fever and eosinophilia, in about 10 of 100 patients, usually during the 1st 4 weeks of therapy. Pruritus, without rash, in about 2 of 100 patients. A reversible associated pemphigoid-like lesion, and photosensitivity have also been reported. Angioedema of the face, mucous membranes of the mouth, or of the extremities in about 1 of 100 patients — reversible on discontinuance of captopril therapy. One case of laryngeal edema reported. Flushing or pallor in 2 to 5 of 1000 patients.

Cardiovascular — Hypotension in about 2 of 100 patients. See WARNINGS (Hypotension) and PRECAUTIONS (Drug Interactions) for discussion of hypotension on initiation of captopril therapy. Tachycardia, chest pain, and palpitations each in about 1 of 100 patients. Angina pectoris, myocardial infarction, Raynaud's syndrome, and congestive heart failure each in 2 to 3 of 1000 patients.

Dysgeusia — About 7 of 100 patients developed a diminution or loss of taste perception; taste impairment is reversible and usually self-limited even with continued drug use (2 to 3 months). Gastric irritation, abdominal pain, nausea, vomiting, diarrhea, anorexia, constipation, aphthous ulcers, peptic ulcer, dizziness, headache, malaise, fatigue, insomnia, dry mouth, dyspnea, and paresthesias reported in about 0.5 to 2% of patients but did not appear at increased frequency compared to placebo or other treatments used in controlled trials.

Altered Laboratory Findings: Elevations of liver enzymes in a few patients although no causal relationship has been established. Rarely cholestatic jaundice and hepatocellular injury with secondary cholestasis have been reported. A transient elevation of BUN and serum creatinine may occur, especially in volume-depleted or renovascular hypertensive patients. In instances of rapid reduction of longstanding or severely elevated blood pressure, the glomerular filtration rate may decrease transiently, also resulting in transient rises in serum creatinine and BUN. Small increases in serum potassium concentration frequently occur, especially in patients with renal impairment (see PRECAUTIONS).

OVERDOSAGE: Primary concern in correction of hypotension. Volume expansion with an I.V. infusion of normal saline is the treatment of choice for restoration of blood pressure. Captopril may be removed from the general circulation by hemodialysis.

DOSAGE AND ADMINISTRATION: CAPOTEN should be taken one hour before meals. Dosage must be individualized; see DOSAGE AND ADMINISTRATION section of package insert for detailed information regarding dosage in hypertension and in heart failure. Because CAPOTEN (captopril) is excreted primarily by the kidneys, dosage adjustments are recommended for patients with impaired renal function.

Consult package insert before prescribing CAPOTEN (captopril).

HOW SUPPLIED: Available in tablets of 25, 50, and 100 mg in bottles of 100, and in UNIMATIC® unit-dose packs of 100 tablets.

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MRS. RYAN: I believe that physicians should share as much information as possible with patients in language that the patient can understand. Of course, this will vary a great deal from patient to patient depending upon a host of variables. Timing is also critical. As I mentioned previously, anxiety can sometimes prevent the absorption of information. Frequently, it will be necessary to have repeated discussions with patients, gradually increasing their fund of information regarding their illness. Nothing can substitute for empathy and concern on the part of the health care practitioner.

DR. NORCROSS: This sharing of information and experience has contributed to our personal growth, but as with any enriching experience, it creates new frontiers and new questions to be answered. What are the responsibilities of health care practitioners in relating medical diagnoses to their patients? I believe that the answer to this question is clear in the extremes, such as cancer and the common cold, but what of the vast gray area in between? What should patients with mitral valve prolapse be told? Mitral valve prolapse is an extremely common condition, and yet it is undeniably organic cardiac pathology. If the diagnosis of asymptomatic hypertension has been shown to have such a dramatic effect on absenteeism, what will the diagnosis of mitral valve prolapse do to a person's life? Even though, for the vast majority of patients, mitral prolapse has little or no effect on quality or quantity of life, a very small percentage will develop bacterial endocarditis or other sequelae of a most serious nature. How much should patients with this disorder be told? Should they be told that on rare occasions the disorder can be lethal?

How do the physician's responsibilities in relating diagnoses change with their perception of the patient's ability to assimilate the data? Do these responsibilities change with the patient's age? What about patients who are reluctant to receive data? These are all critical questions that must be answered in the future.

DIANE MASON *(Licensed Clinical Social Worker)*: My belief is that knowledge is not ours to keep, and is the property of the patient as well. Regardless of the implications that a diagnosis may have to a patient, the physician's obligation is to share that information with the patient—not al-

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ways at one sitting, not bluntly, not insensitively, but always to share it, nonetheless. The physician's relationship with his patient is critical in this regard. With a thorough understanding of the patient, one can determine the best way to provide information. The obligation then comes to help the patient adjust to the knowledge of the illness.

DR. NORCROSS: The truth can be a dangerous thing. My conflict lies between the truth and the physician's responsibility to assist his patients in finding quality in their lives.

MS. MASON: In this instance, the experience seems remarkably positive. At a young age you were confronted with your own mortality, which resulted in a greater appreciation of life.

MRS. RYAN: I would like to say, though, that in many ways I regret the loss of innocence.

DR. NORCROSS: I would like to thank the participants in today's conference, especially Barbara Ryan, for their thoughtful contributions to this discussion. Even with the scant data available today, it is clear that medical diagnoses can have serious and longlasting effects on the lives of patients. The physician must be sensitive and empathic in sharing information with patients. Nothing can surpass a trusting and caring relationship between the patient and practitioner. The physician should carefully help his patients adapt to the knowledge of their illness, and should provide an open atmosphere in which the patient can feel free to communicate his or her concerns. Careful attention should be given to the possible sequelae of diagnoses by actively searching for problems that arise in the patient's life. This must be an active function on the part of the health care practitioner, since many patients may not easily share that their illness is generating dreadful problems for them. Perhaps, in this way physicians can diminish the adverse effect of their diagnoses and increase their patients' chances of leading happy and productive lives.

References

1. Haynes RB, Sackett DL, Taylor DW, et al: Increased absenteeism from work after detection and labeling of hypertensive patients. N Engl J Med 299:741, 1978

2. Sox HC, Margulies I, Sox CH: Psychologically mediated effects of diagnostic tests. Ann Intern Med 95:680, 1981