
Family Practice Grand Rounds

The Decision To See the Physician: Differential Diagnosis of the 1 AM Dilemma

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DR. KARL F. WEYRAUCH (*Second-year Resident, Department of Family Medicine*): The purpose of today's Grand Rounds is two-fold: first, to demonstrate there are significant nonmedical components to patients' decisions to see the physician that may be described in the language of sociology, anthropology, and psychology; second, to provide an approach to the common problem of the late night patient who appears with no apparent reason for consulting the physician (an approach that offers a constructive alternative to getting angry or telling the patient to go away). Participants today include Dr. Ira Taylor and Dr. Cynthia Wannamaker of our residency faculty.

DR. CYNTHIA WANNAMAKER (*Clinical Attending Physician, Department of Family Medicine*): A seven-year-old black girl presented to the emergency room at 1 AM with the chief complaint of "an injured vagina."

She said she was in her usual state of health

until 4 PM on the day before, when while seated on the hood of a car, she was pulled feet-first to the ground by a five-year-old neighbor boy, sustaining blunt trauma to her genitalia by the hood ornament. There was no bleeding, and she told no one of her injury.

At the time of this episode, the patient's mother was at home in bed, treating herself for a toothache and a "cramp in the stomach," and the patient was under the care of her grandmother.

On the morning of the day of arrival, patient appeared to her mother to be in normal health. That afternoon her grandmother saw her walking with a limp and favoring her left leg. That night the patient's mother noticed a white discharge staining the girl's underpants.

In the emergency room, the patient complained of pain in the left inguinal region and of dysuria. She admitted no symptoms of increased urinary frequency, nocturia, hematuria, or previous urinary tract infection, nor did she admit to any sexual contact.

On examination her temperature was 99.6°F, pulse 104 beats/min, respirations 24/min, and weight 54 lb. She was a well-dressed, talkative, and precocious female in no distress. General physical examination was within normal limits. Inspection of the external genitalia revealed a large amount of thick, white discharge. The hymenal ring appeared intact. There were no lacerations and no evidence

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of bleeding. A 1×1-cm abrasion in the medial left inguinal crease that was tender to touch was noted. Vaginal examination was attempted with a nasal speculum without success.

Laboratory data included potassium hydroxide preparation, which was inadequate because of insufficient sample, saline preparation, which was negative for trichomonas, and a Gram stain of the discharge, which showed many white blood cells, gram-negative cocci, and gram-positive bacilli. Urinalysis revealed yellow, clear urine having a specific gravity of 1.007 and a pH 7. It was negative for protein, sugar, ketones, bile, blood, or nitrate. Microscopic examination showed only rare white blood cells per high-power field and rare red blood cells per high-power field. A culture for *Neisseria gonorrhoeae* was obtained.

The clinical impression at the time of the visit was (1) possible traumatic vaginitis, (2) abrasions, and (3) rule out gonorrhea. Patient was treated with a prescription for AVC cream and scheduled for follow-up appointment to the General Pediatrics Clinic in four days for a recheck.

The patient did not present for follow-up, and a procedure was scheduled by the physician who saw her in the emergency room.

DR. IRA TAYLOR (*Behavioral Science Division, Department of Family Medicine*): I will briefly discuss this case with respect to what Simon Yudkin has called the second diagnosis,¹ "Why is the patient consulting you now?" Although this question is ignored in many patient encounters,²⁻⁴ it is fundamental to the biopsychosocial perspective of health care⁵ and is of particular significance for family physicians.

The possible explanations for the decision to see the physician in this case are numerous. A list of those most pertinent for family physicians would include (1) decision for information, guidance, or administrative purposes, (2) decision because of a somatizing personality, (3) decision because of cultural or familial characteristics, and (4) decision as an outcome of a health belief system. I will discuss the first three possibilities, and Dr. Weyrauch, the fourth.

First, the decision makers (presumably the patient's grandmother and mother in this case) may have decided to consult the physician to satisfy a par-

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INDICATIONS AND USAGE

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CONTRAINDICATIONS

This product is contraindicated in those individuals who have shown hypersensitivity to any of its components, and in herpes simplex, vaccinia and varicella.

WARNINGS

As with other antibiotic preparations, prolonged treatment may result in overgrowth of nonsusceptible organisms and fungi.

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If sensitization or irritation occurs, medication should be discontinued promptly.

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Treatment should not be continued for longer than ten days.

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Neomycin is a not uncommon cutaneous sensitizer. There are articles in the current literature that indicate an increase in the prevalence of persons sensitive to neomycin.

DOSAGE AND ADMINISTRATION

The external auditory canal should be thoroughly cleansed and dried with a sterile cotton applicator.

For adults, 4 drops of the suspension should be instilled into the affected ear 3 or 4 times daily. For infants and children, 3 drops are suggested because of the smaller capacity of the ear canal.

The patient should lie with the affected ear upward and then the drops should be instilled. This position should be maintained for 5 minutes to facilitate penetration of the drops into the ear canal. Repeat, if necessary, for the opposite ear.

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Contraindications: Potassium supplements are contraindicated in patients with hyperkalemia since a further increase in serum potassium concentration in such patients can produce cardiac arrest. Hyperkalemia may complicate any of the following conditions: chronic renal impairment, metabolic acidosis such as diabetic acidosis, acute dehydration, extensive tissue breakdown as in severe burns or adrenal insufficiency. Hypokalemia should not be treated by the concomitant administration of potassium salts and a potassium-sparing diuretic (e.g., spironolactone or triamterene), since the simultaneous administration of these agents can produce severe hyperkalemia.

Warnings: In patients with impaired mechanisms for excreting potassium, the administration of potassium salts can produce hyperkalemia and cardiac arrest. This occurs most commonly in patients given potassium by the intravenous route but may also occur in patients given potassium orally. Potentially fatal hyperkalemia can develop rapidly and may be asymptomatic. The use of potassium salts in patients with chronic renal disease, or any other condition which impairs potassium excretion, requires particularly careful monitoring of the serum potassium concentration and appropriate dosage adjustment.

Precautions: *General precautions*—The diagnosis of potassium depletion is ordinarily made by demonstrating hypokalemia in a patient with a clinical history suggesting some cause for potassium depletion. When interpreting the serum potassium level, the physician should bear in mind that acute alkalosis *per se* can produce hypokalemia in the absence of a deficit in total body potassium, while acute acidosis *per se* can increase the serum potassium concentration into the normal range even in the presence of a reduced total body potassium. Therefore, the treatment of potassium depletion requires careful attention to acid-base balance and appropriate monitoring of serum electrolytes, the ECG, and the clinical status of the patient.

Information for patients—To minimize the possibility of gastrointestinal irritation associated with the oral ingestion of concentrated potassium salt preparations, patients should be carefully directed to dissolve each dose completely in the stated amount of water.

Laboratory tests—Frequent clinical evaluation of the patient should include ECG and serum potassium determinations.

Drug interactions—The simultaneous administration of potassium supplements and a potassium-sparing diuretic can produce severe hyperkalemia (see Contraindications). Potassium supplements should be used cautiously in patients who are using salt substitutes because most of the latter contain substantial amounts of potassium. Such concomitant use could result in hyperkalemia.

Usage in pregnancy—Pregnancy Category C—Animal reproduction studies have not been conducted with any of the K-Lyte products. It is also not known whether these products can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. They should be given to a pregnant woman only if clearly needed.

Nursing mothers—Many drugs are excreted in human milk and because of the potential for serious adverse reactions in nursing infants from oral potassium supplements, a decision should be made whether to discontinue nursing or discontinue the drug, taking into account the importance of the drug to the mother.

Usage in children—Safety and effectiveness in children have not been established.

Adverse Reactions: The most common adverse reactions to oral potassium supplements are nausea, vomiting, diarrhea and abdominal discomfort. These side effects occur more frequently when the medication is not taken with food or is not diluted properly or dissolved completely.

Hyperkalemia occurs only rarely in patients with normal renal function receiving potassium supplements orally. Signs and symptoms of hyperkalemia are cardiac arrhythmias, mental confusion, unexplained anxiety, numbness or tingling in hands, feet or lips, shortness of breath or difficult breathing, unusual tiredness or weakness and weakness or heaviness of legs (see Contraindications, Warnings and Overdosage).

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feels the symptom is but also on how susceptible a person feels to the disease it implies. A belief in the value of any contemplated action depends on a comparison of the relative magnitude of the barriers to obtaining care (eg, physician's bills) vs the probability of a beneficial outcome (ie, a cure).

The beliefs are influenced by a host of modifying variables, including the patient's age, sex, race, marital status, ethnicity, and so on. The cultural and demographic factors studied by Koos and others are included in this category.

The third component of the model is the "trigger for action." It depends on the person's actual symptoms, his subjective perception of them, his level of psychological distress, and a host of environmental factors that may stimulate him to decide what to do about his condition. The trigger for action may be biological or social in origin. Zola¹⁹ has elaborated on these triggers to seeking medical care.

Regarding today's case, the following hypothesis could be developed using the Health Belief Model: The decision to go to the emergency room was made because the mother thought her daughter susceptible to an unknown but serious condition (high threat). The benefit of seeing the physician (relief of suffering or anxiety) must have outweighed the barriers to seeking care (cost, hour of night), resulting in a high perceived value for seeking care. The trigger for action might have been the grandmother's suggestion that something serious was wrong. Even without a specific trigger for action, the mother may have decided to see the physician because of the strength of her belief in the threat of disease and value of action.

To test this hypothesis, I performed a home visit (truly a procedure in family medicine)²⁰ to find out how the decision had actually been made. The grandmother, matriarchal head of the family, volunteered that she had been the decision maker in this case. She is a retired housekeeper, widowed 17 years, and the mother of 13 children and grandmother of five. She explained that the morning of the day of arrival she had noted the patient to be walking with a limp, which the patient had told her resulted from falling off a skateboard. She knew that the patient had then spent the day with

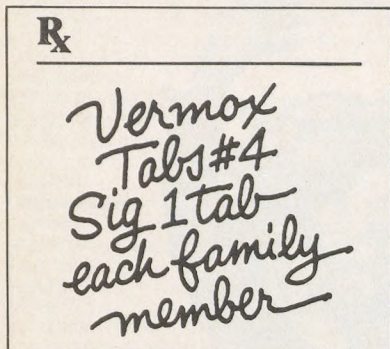
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VERMOX[®] CHEWABLE TABLETS

(mebendazole)

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DESCRIPTION VERMOX (mebendazole) is methyl 5-benzoylbenzimidazole-2-carbamate.

ACTIONS VERMOX exerts its anthelmintic effect by blocking glucose uptake by the susceptible helminths, thereby depleting the energy level until it becomes inadequate for survival. In man, approximately 2% of administered mebendazole is excreted in urine as unchanged drug or a primary metabolite. Following administration of 100 mg of mebendazole twice daily for three consecutive days, plasma levels of mebendazole and its primary metabolite, the 2-amine, never exceeded 0.03 µg/ml and 0.09 µg/ml, respectively.

INDICATIONS VERMOX is indicated for the treatment of *Trichuris trichiura* (whipworm), *Enterobius vermicularis* (pinworm), *Ascaris lumbricoides* (common roundworm), *Ancylostoma duodenale* (common hookworm), *Necator americanus* (American hookworm) in single or mixed infections. Efficacy varies as a function of such factors as pre-existing diarrhea and gastrointestinal transit time, degree of infection and helminth strains. Efficacy rates derived from various studies are shown in the table below:

	Whipworm	Common Roundworm	Hookworm	Pinworm
cure rates				
mean	68%	98%	96%	95%
(range)	(61-75%)	(91-100%)	—	(90-100%)
egg reduction				
mean	93%	99.7%	99.9%	—
(range)	(70-99%)	(99.5%-100%)	—	—

CONTRAINDICATIONS VERMOX is contraindicated in pregnant women (see Pregnancy Precautions) and in persons who have shown hypersensitivity to the drug.

PRECAUTIONS PREGNANCY: VERMOX has shown embryotoxic and teratogenic activity in pregnant rats at single oral doses as low as 10 mg/kg. Since VERMOX may have a risk of producing fetal damage if administered during pregnancy, it is contraindicated in pregnant women.

PEDIATRIC USE: The drug has not been extensively studied in children under two years; therefore, in the treatment of children under two years the relative benefit/risk should be considered.

ADVERSE REACTIONS Transient symptoms of abdominal pain and diarrhea have occurred in cases of massive infection and expulsion of worms.

DOSAGE AND ADMINISTRATION The same dosage schedule applies to children and adults. The tablet may be chewed, swallowed or crushed and mixed with food. For the control of pinworm (enterobiasis), a single tablet is administered orally, one time. For the control of common roundworm (ascariasis), whipworm (trichuriasis), and hookworm infection, one tablet of VERMOX is administered, orally, morning and evening, on three consecutive days. If the patient is not cured three weeks after treatment, a second course of treatment is advised. No special procedures, such as fasting or purging, are required.

HOW SUPPLIED VERMOX is available as chewable tablets, each containing 100 mg of mebendazole, and is supplied in boxes of twelve tablets. VERMOX (mebendazole) is an original product of Janssen Pharmaceutica, Belgium.

US Patent 3,657,267
December 1979

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an older girlfriend. The grandmother felt that the limp and the association with the girlfriend that afternoon constituted a significant *threat* to the girl's health. At 11 PM the grandmother returned from a movie and was told by her 14-year-old daughter (patient's aunt) that the patient was lying in bed moaning with pain in her groin. At hearing this news (trigger to action) the grandmother made a snap decision that the patient should see the physician. The reasons she gave for going to the emergency room were that she knew it was open 24 hours, that care was provided there regardless of the ability to pay, and that physicians there had helped her before (high value of action). Interestingly, while making her decision, she knew nothing about the child's vaginal discharge. In this case, the modifying variables included the grandmother's role in the family and her experience in child rearing and in utilizing the emergency room for medical care.

Thus, the Health Belief Model allows the clinician a framework for generating hypotheses to explain patients' decisions to see the physician. Moreover, its elements are identifiable empirically when the model is applied retrospectively to the patient's recollection of the decision-making process.

DR. BEN GOODMAN (*Director, Residency Program*): Dr. Taylor, in today's case, aren't there nonmedical needs that play into the decision to see the physician? The mother's concern for the patient's physical symptoms suggests she did seek reassurance and information. Also, she had strong feelings to ventilate and was probably looking for support or guidance.

DR. TAYLOR: You are quite right in pointing out that there are multiple factors contributing to the decision to see the physician in this and all cases. The formulation that this decision was made primarily to satisfy nonmedical needs is unsatisfactory, however, because it sheds little insight onto the process of decision making, it does not account for their choice to utilize the emergency room for care, or to come at 1 AM.

THIRD-YEAR FAMILY PRACTICE RESIDENT: You mentioned the somatizing personality as one type of patient who sees the physician for his own special reasons. Are there different types of somatizing personalities?

DR. TAYLOR: Yes, it has been suggested that the personality characteristics of an individual may allow us to describe him as a masochistic, hostile, or dependent somatizer.⁹ The masochistic somatizer uses illness as a way to punish himself for the guilt he feels about certain thoughts or past events. The hostile somatizer carries in him much anger at the people in his past who he thinks have not cared for him as much as he needed to be cared for. He expresses this anger by burdening others with his suffering and may seek a physician's advice, then reject it as useless. The dependent, needy type of somatizer amplifies his symptoms to gain the sympathy and attention that were lacking in his upbringing.

DR. PAMELA GELLER (*Family Physician, Department of Family Medicine*): Dr. Taylor, the Health Belief Model you have presented may be an interesting way to approach the subject of illness behavior, but could you perhaps elaborate on why the study of illness behavior itself is of particular significance to the family physician?

DR. TAYLOR: Understanding the illness behavior of patients will help the family physician assess how and why they decide to utilize or avoid his services. With this knowledge he should in turn be able to (1) organize his practice to better satisfy patients' expectations; (2) direct re-educational efforts at those expectations he finds unrealistic or impractical; and (3) comprehend more fully the natural history of human health and illness, particularly the earliest stages of illness that are the domain of family medicine.

SECOND-YEAR FAMILY PRACTICE RESIDENT: Dr. Weyrauch, did you ever discover why the patient did not present for follow-up care?

DR. WEYRAUCH: Yes, on my home visit I was interested to learn that the patient's failure to keep her follow-up appointment followed her having been contacted instead by the local health department. The gonococcus culture had been positive, she had already been treated appropriately, and the details of her case were under investigation by a public health caseworker. The patient's mother commented later that the patient had finally revealed that she had been sexually assaulted by a 19-year-old male neighbor. Apparently this information was not known to the mother or the grandmother at the time of their emergency room visit.

In summary, this Grand Rounds has explored

the question of why people decide to see the physician. We have seen that many nonmedical factors, such as educational, administrative, cultural, social, and personality characteristics, enter into the decision, but they do not provide an explanation for specific patient behavior. Alternatively, the Health Belief Model provides a clinically useful approach to this question as well as an introduction to the field of health and illness behavior.

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