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Balancing acts: Deciding for or against antibiotics in acute respiratory infections

Practice recommendations

- Keep in mind that patients may not distinguish antibiotics from other forms of prescription cold remedies.
- When patients ask for antibiotics, they really may be seeking reassurance and effective symptom management.
- Consider using negotiation strategies to delay antibiotic prescribing.

Abstract

Background Overprescribing of antibiotics for acute respiratory infections (ARIs) has contributed to antibiotic resistance. Multiple clinician, patient, and system-related factors contribute to the prescribing of antibiotics for ARIs; however, these factors do not explain how clinicians arrive at their decisions to prescribe antibiotics. The purpose of our study was to describe this decision-making process.

Methods We conducted comprehensive interviews with 21 primary health care clinicians practicing in a rural Western US community. Our study used a qualitative descriptive design informed by grounded theory, and we analyzed data with a constant comparative method.

Results Two theoretical concepts emerged from the interviews: 1) *individual best practice* described how each clinician attempted to do what he or she believed

to be clinically best for the patient presenting with acute respiratory symptoms. The second concept, *perceived patient satisfaction*, described how the clinicians endeavored to satisfy patients, according to their own perceptions of the patient's potential to be satisfied.

2) *Balancing acts* emerged as the basic social process and is defined as the process whereby clinicians weigh *individual best practice against perceived patient satisfaction* when deciding whether to prescribe antibiotics for patients presenting with ARIs.

Conclusion The results of this investigation have important clinical and educational implications for reducing inappropriate antibiotic use for ARIs. Further controlled trials are warranted.

Patient, clinician, and system factors influence unnecessary antibiotic prescribing for viral acute respiratory infections (ARIs). When patients seek care for ARIs, they use a variety of tactics to obtain antibiotic prescriptions.¹ Both clinicians and patients tend to overemphasize the importance of purulent secretions, whether from the nose or lung, in deciding whether an antibiotic is needed.²⁻⁴

Antibiotic prescribing increases with clinician age⁵ and number of years in practice,⁶ and antibiotics are more likely to be prescribed for ARIs in urban⁵ and nonteaching^{7,8} practice settings.

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In addition, clinicians' perceptions that patients or parents expect antibiotics are often inaccurate. They frequently assume that patients are dissatisfied when they do not receive antibiotic prescriptions for ARIs; however, accurate explanations and reassurance, not antibiotic prescriptions, have been shown to increase patient satisfaction.^{9,10}

These factors, though known to be associated with excessive antibiotic prescribing, do not explain how clinicians actually make decisions to give antibiotics for ARIs. Thus, we applied grounded theory—a qualitative research method used to examine social processes—to provide insight into the antibiotic prescribing process.¹¹

■ Methods

Setting

Our study was conducted in a rural Western community with a population of 32,014, served by 24 primary care clinicians.

Sample

We aimed to interview all of the community's 24 primary care clinicians. Each clinician was mailed information about the study and then received a follow-up phone call to arrange an interview. Three clinicians were not interviewed due to scheduling conflicts.

The median age of the participants was 43 years with a range of 32 to 58. Nine subjects (43%) were women. Four subjects were nurse practitioners (NPs) and 17 were MDs. Areas of practice included internal medicine (n=5), college health (n=5), family medicine (n=4), pediatrics (n=4), and emergency medicine (n=3). No clinicians were representative of minority ethnic groups.

Interviews

We gathered data in audiotaped, semi-structured interviews. Hart, a practicing NP in the study community who received

doctoral training in qualitative research, interviewed the 21 clinicians. The interviews ranged from 30 to 120 minutes with an average of 1 hour.

The clinician was asked to describe how he or she decided when patients presenting with ARIs should receive antibiotics. They were also asked to describe situations in which they would “most definitely” or “definitely not” prescribe antibiotics and situations that caused uncertainty. They were also asked to describe challenges associated with ARI management.

Data analysis

Hart analyzed the interviews using the constant comparative method, a form of qualitative analysis whereby each unit of data is compared with previously identified units.¹¹ Each line of transcribed interview data was analyzed chronologically and coded for patterns, themes, and processes. The resulting codes were then compared for similarities and differences. Categories and “families” of categories were developed. This process continued until the basic social process, or one phenomenon central to each interview, was discovered. The findings were then discussed and refined by members of the research team, consisting of Pepper and Gonzales, as well as 3 PhD-prepared researchers with expertise in qualitative research.

Credibility

A recognized method for establishing credibility in qualitative research is through the use of “member checks,” wherein findings are presented to the original study participants for confirmation and clarification.¹² A group member check was obtained during a “Grand Rounds” presentation at the community hospital. Thirty-one people attended, including 9 of the original participants. During a forum following the presentation, study participants confirmed that the findings accurately described their anti-biotic prescribing processes.

FAST TRACK

Clinicians' perceptions that patients expect antibiotics are often inaccurate; satisfaction is increased by explanation and reassurance

TABLE

The balancing act: Individual best practice vs patient satisfaction

FACTORS INFLUENCING INDIVIDUAL BEST PRACTICE

Initial training

Types of evidence used/valued to inform practice
(eg, current research-based evidence, clinical experience)

Familiarity with evidence-based practice

Interaction with peers

Clinical uncertainty

FACTORS INFLUENCING PERCEIVED PATIENT SATISFACTION

Patient/parent concerns

Day care and school concerns

Unique patient situations

Business concerns

FAST TRACK

The basic process came down to balancing acts—weighing best practice for each patient and their perceived satisfaction

■ Results

Two main concepts emerged from the interviews: *individual best practice* and *perceived patient/parent satisfaction*. These concepts are discussed using illustrative quotes from actual interviews.

Individual best practice describes how each clinician was attempting to do what he or she believed to be clinically “best” for the patient presenting with ARI symptoms. Clinicians differed in their approaches to patients presenting with ARIs. Some prescribed antibiotics for non-specific upper respiratory infection symptoms. Others were reluctant to prescribe antibiotics unless strict diagnostic criteria were met. Ultimately, each clinician made a decision based on what he or she believed was best for the patient. What defined “best” was clinician-specific. Though “best practice” always derived from evidence that informed the individual’s practice, it should not be confused with the term “best research evidence,” as defined by Straus et al.¹³ Five categories influenced the concept of individual best practice (TABLE).

Types of evidence used/valued to inform practice was the most influential of the 5 categories. Twelve clinicians indicated that their main source of clinical evidence was current research-based findings and related practice guidelines. The other 9 based their clinical practice on other forms of evidence, including personal and professional observations or experiences; discussions with pharmaceutical representatives; discussions with colleagues; and experiences reported by patients. Regarding personal experiences, one clinician said, “We’ll talk about my personal experiences.... Just like you have yours, I have mine and they don’t just include patients that I see. They include family members and people that I live with who’ve had an infection for 5 days—I give them an antibiotic. Two days later, they are up and about ... so my empiric evidence over and over again reinforces that antibiotics are great. They work.”

Perceived patient/parent satisfaction, the second concept, describes how clinicians attempted to satisfy patients or parents according to their own perceptions of the patients’ potential to be satisfied. The 4 categories influencing the concept of perceived patient satisfaction are shown at the bottom of the TABLE.

Business concerns was the most interesting category. All 21 clinicians described the impact of patient satisfaction on the financial aspects of their practices. The 16 clinicians who collected on a fee-for-service basis described patient satisfaction as an important aspect of their livelihood as illustrated in the following comment: “You shouldn’t be treating all respiratory infections with antibiotics? Certainly. Is it practical? Probably not. I probably wouldn’t have as good of a collection rate. I truly think that part of what you’re doing is consumer-based medicine.”

Conversely, the 5 clinicians who were salaried and who did not charge on a fee-for-service basis indicated that, from a business standpoint, they were not as concerned about patient satisfaction. One clinician stated, “We can practice the better

standards because of the cost elements.... You know I would feel very put upon if I had to charge every time I saw someone.”

Balancing acts. Further analysis revealed that the basic social process common to all participants was *balancing acts*—a process whereby clinicians weigh *individual best practice* against *perceived patient satisfaction*. Each clinician had ideas about what constituted best practice; however, each was also concerned about maintaining good patient relationships and often saw these 2 concepts at odds. Every decision that included individual best practice information was adjusted for perceived patient satisfaction. As one clinician aptly commented, “I always debate. I do a lot of mental hand wringing.”

Four types of *balancing acts* were identified: (a) education, (b) negotiation, (c) giving in, and (d) holding firm.

- By **educating** patients about the data informing their decision to not prescribe antibiotics, clinicians offered that they could often increase perceived patient satisfaction and successfully refrain from prescribing antibiotics: “Eighty percent of the time, if I explain to them about the study where they actually punctured the maxillary sinuses and cultured what they brought out and you know 90% of them did not grow out—they’re shocked, and lots of time, they’ll say, “Why didn’t my doctor ever tell me this?”

- **Negotiation** was another strategy identified for increasing perceived patient satisfaction. Every clinician described discussions and prescriptions regarding symptom management as a negotiation strategy for increasing patient satisfaction. Eleven clinicians described how they would negotiate with the patient about what to do if symptoms did not improve: “So I give them a specific date... and I say, “Well, let’s give it a week—if it’s not any better then call and if there are no new symptoms, then I’ll call something (an antibiotic) in for it.”

- All of the clinicians reported situations where education and negotiation failed to work, or where the patient seemed so unconvincible that attempt seemed futile. In these situations, clinicians found them-

selves **giving in**—ie, abandoning individual best practice to salvage perceived patient satisfaction. One example: “Well in some cases, when someone seems so persistent, I will say, ‘Look, I’ve been able to tell you how I feel and what I think about what’s going on with you. If you are still adamant that you need an antibiotic, then fine, if you’re going to go somewhere else to get an antibiotic, I will prescribe an antibiotic for you.’”

- The last balancing act described by all but 1 of the clinicians was **holding firm** to their ideas regarding individual best practice, regardless of perceived patient satisfaction: “Once in awhile, I just kind of have to say, ‘You know, I don’t think antibiotics are necessary. I just don’t want to do that.’”

■ Discussion

Though **individual best practice** has not been referred to as such, it is by no means a novel idea and is at the core of the evidence-based practice debate, wherein evidence obtained from research is often viewed as being at odds with clinician experience.^{14–16} However, our study also revealed that some clinicians were unfamiliar with the research-based evidence they claimed to use. For example, 2 clinicians who claimed familiarity with research-based evidence indicated they would strongly consider prescribing antibiotics for a productive cough regardless of other historical or exam findings.

Perceived patient satisfaction has received much attention in and out of the “antibiotic” literature for its powerful influence on clinical decision-making.^{1,17–19} Our findings further this concept by identifying several of the factors that influence it, including patient-driven (eg, unique patient situations) and clinician-driven (eg, business concerns).

Though *balancing acts* is a new term, 3 of the 4 types of balancing acts have been alluded to in the antibiotic literature. Several studies have demonstrated that *patient education* can decrease antibiotic prescribing and use.^{10,20,21}

FAST TRACK

Studies have shown no relationship between antibiotic prescribing and patient satisfaction

FAST TRACK

Delaying antibiotics by negotiation has decreased their use and increased patient satisfaction

Similarly patient *negotiation*, through the use of delayed antibiotic prescribing or a contingency plan for delayed prescribing, has also decreased antibiotic prescribing^{22,23} and increased patient satisfaction.²⁴ Furthermore, it is well documented that the act of *giving in* to perceived patient desires for antibiotics occurs frequently.^{1,10,25}

Holding firm was the only balancing act not paralleled in the literature. This likely stems from the fact that most research efforts have focused on situations where antibiotics were inappropriately prescribed, as opposed to situations where they were appropriately withheld. However, now that there is evidence of a decrease in antibiotic use for ARIs,^{26,27} it is likely that *holding firm* is occurring more often.

Study strengths and limitations

Interviewing both physicians and nurse practitioners increases our study's overall applicability. Moreover, the fact that our participants practiced in the same close-knit community increased the likelihood that they were dealing with a consistent patient population.

One facet that serves as both a strength and limitation is that the main investigator (Hart) worked as a nurse practitioner in the community of study. Her experience treating patients with ARIs and her role as a community clinician undoubtedly helped her gain access to the participants, but being an "inside" investigator might have caused participants to be less candid than they would have been with an unknown investigator.

Our study relied solely on information gleaned from participant interviews; thus it is possible that some of the participants described their antibiotic prescribing processes differently than how the processes actually work during clinical encounters.

Finally, our findings represent actual descriptions of clinicians' practices. *Balancing acts* and related concepts should not be confused with our beliefs about "ideal" clinical decision-making.

Implications

The *balancing acts* process and related concepts have several implications for clinician education and practice. Regarding *individual best practice*, we need to recognize that clinicians make decisions based on many different forms of evidence, including but not limited to research-based evidence, outdated or incorrect sources of literature, and personal and professional experiences. They also may be most comfortable practicing in the manner and style they were exposed to in their initial training experiences. Thus, in addition to exposing clinicians to research-based evidence, we need to teach them how to integrate research-based evidence into their practices, as well as how to deal with research findings that seem to conflict with their own observations or primary training experiences. Recognizing and using local peer influences is one way to support this concept and has been shown to be an effective strategy.²⁸

Furthermore, we should not underestimate the impact of *perceived patient satisfaction* on clinician decision-making. Clinicians need to understand patient satisfaction and how it influences their practices. They need to appreciate that their own perceptions of patient desires may be inaccurate.^{29,30} They also need to be aware that studies have shown no relationship between antibiotic prescribing and patient satisfaction,³⁰⁻³² and that patients are most satisfied when clinicians spend time with them, respect their symptoms, and honestly address their concerns.³³⁻³⁵

Clinicians should also appreciate that patients may not distinguish antibiotics from other forms of prescription cold remedies and that when they ask for antibiotics, they really may be seeking reassurance and effective symptom management.³⁶ Furthermore, they need to be aware of and comfortable using various patient education, comfort, and negotiation strategies, such as symptom management and delayed antibiotic prescribing. Professional education that includes examples of realistic clinician/patient scenarios might be helpful with this. ■

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Patients may not distinguish antibiotics from other prescription cold remedies, and may only be seeking effective symptom management