Antimicrobial practice

Antibiotics and shared decision-making in primary care

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Antibiotics are often prescribed to patients with respiratory tract infections who are unlikely to benefit. Models of physician–patient interaction may help understanding of this problem and inform the design of communication skills interventions to enhance appropriate prescribing. The ‘paternalistic model’ of the consultation remains common in the setting of acute respiratory tract infections. However, the four assumptions that could support this model are not valid for most of these patients, because: best treatment is controversial; management is inconsistent; physicians are not in the best position to evaluate trade-offs between management options without understanding patients’ perspectives; and many pressures (apart from patients’ agendas) intrude into the consultation. One alternative is the ‘informed model’ of consulting, but this does not take society’s interests into account. The ‘shared decision-making model’, however, provides a framework for addressing both clinicians’ and patients’ agendas, and could guide the development and evaluation of specific consultation strategies to promote more appropriate use of antibiotics in primary care.

Introduction

Acute infections of the upper and lower respiratory tract are the most common reason for consulting in primary care. Despite a downward trend, antibiotics are still frequently prescribed even though they shorten the duration of these symptoms modestly, if at all, for most patients with colds,\textsuperscript{1} sore throat,\textsuperscript{2} otitis media,\textsuperscript{3} sinusitis\textsuperscript{4} and bronchitis.\textsuperscript{5} This adds to the growing problems of antimicrobial resistance, unnecessary exposure to potential side effects and inappropriate use of resources, and encourages a ‘vicious circle’ in which these infections become associated with consulting and antibiotic treatment.\textsuperscript{6,7} Most primary care clinicians agree that antibiotics are over-prescribed, but face complex challenges in changing practice.\textsuperscript{8–10} Communication within the consultation is a key issue.\textsuperscript{8–10} Charles and colleagues\textsuperscript{13} propose a continuum in models of the consultation, ranging from the ‘paternalistic model’ through the ‘shared decision-making model’ to the ‘informed choice model’. Each model will be examined in relation to the consultation for acute respiratory tract symptoms in primary care with the aim of understanding the gap between the evidence base and prescribing patterns as well guiding the design of interventions for enhancing clinical practice.

The paternalistic model

The physician in a dominant role lies at the heart of the paternalistic consultation: a clinician takes a history, performs a physical examination and then informs the patient about the cause of the problem and prescribes the best treatment. The following four assumptions together could justify such a paternalistic approach.\textsuperscript{13}

Assumption one: a single best treatment exists

As far back as the 1950s, trial evidence showed antibiotics had similar effects to placebo on sore throats.\textsuperscript{14} However, a recent trial\textsuperscript{15} found a greater benefit from penicillin for sore throat than many might have expected.\textsuperscript{2,16} In some presumed respiratory tract infections, anti-inflammatory treatment may be more appropriate than antibiotics.\textsuperscript{17} In one study, clinicians were unsure of their clinical diagnoses of sinusitis in one-third of cases and correct in only 40%
when compared with ultrasound diagnoses. 

Recent work has questioned traditional diagnostic categories and suggested that sinusitis, upper respiratory tract infection and acute bronchitis are all variations on the same clinical condition. Therefore, there is often uncertainty not only about best treatment but also at the level of diagnosis.

Assumption two: physicians know the best treatments available and consistently apply them

Applying epidemiological evidence to individual treatment decisions can be difficult. Antibiotic prescribing for winter colds in children was found to range from 20 to 60%. Clinicians’ reported prescribing decisions varied when social components of clinical scenarios were changed. An association has been found between the prescription of antibiotics for children with the prescription of psychotropic drugs for their mothers. There is wide variation in antibiotic prescribing within and between countries. Consistency is therefore not the norm.

Assumption three: physicians are in the best position to evaluate trade-offs between different treatments and to make treatment decisions

With evidence for marginal benefit of antibiotics in many situations and high rates of side effects from antibiotic treatment, clinicians should no longer be confident they are in the best position to make cost–benefit analyses for patients. Patients make their own evaluations, and problems arise when these are not elicited and addressed in the consultation. An association has been found between misunderstandings about medication and patients’ lack of participation in the consultation. Only a small minority of those preferring not to take antibiotics express this. Such unvoiced agenda items have been associated with unwanted prescriptions, non-use of prescriptions and non-adherence to treatment. The item most commonly desired by patients but not received was found to be discussion of the patient’s ideas about treatment. Given this uncertainty and lack of overt exploration of patients’ evaluations, doctors try to second-guess what patients want. When doctors think patients want medicines, they are 10 times more likely to prescribe, and over 20% of patients not expecting medication leave the consultation with a prescription. Physicians’ perceptions of parental expectations for antibiotics have been identified as the only significant predictor of prescribing antibiotics for presumed viral aetiology. Non-clinical factors influenced nearly half the prescribing decisions for patients with acute lower respiratory tract symptoms, with perceived patient pressure most frequently cited. Paediatricians acknowledged prescribing antibiotics when they are not indicated because of pressure from parents.

Perceived patient expectations for antibiotics appeared to influence the diagnostic process itself: physicians who perceived high parent expectations for antibiotics were twice as likely to record a diagnosis for which antibiotics could be justified, and three times more likely to prescribe an antibiotic. However, patient expectations may be based on false assumptions with many overestimating the effectiveness of antibiotic treatment. For example, cross sectional surveys in the USA found that 79% of respondents believed antibiotics are effective for a discoloured nasal discharge, and 31–61% believed antibiotics to be effective against colds. In a European survey, over 50% of respondents believed that antibiotics should be prescribed for all respiratory tract infections with the exception of a simple cold. Thus, clinicians on their own do not know whether or not antibiotics are, on balance, best for individual patients: their ‘antennae’ for sensing what patients want may be active but are frequently inaccurate. Moreover, patients’ hopes for antibiotics may be based on unsound assumptions or experiences in previous consultations.

Assumption four: because of their professional concern for the welfare of their patients, physicians have a legitimate investment in each treatment decision

Appeals to reduce antibiotic prescribing often arise more out of concern for the health of the general public rather than for the well-being of individual patients. As one clinician commented in a qualitative study of doctors’ and patients’ accounts of consultations for sore throats, ‘it would be better for the community [if] people would not take antibiotics, but I have a feeling for the individual it is better for him or for her to take antibiotics.’ Moreover, the interests of the organization employing clinicians intrude increasingly into decisions about treatment for individuals, especially in managed care contexts.

Many clinicians continue to consult in a paternalistic mode because they perceive it to be quick and antibiotics are used to bring closure to the consultation providing a tangible indication the patient has been taken seriously. Some clinicians do not feel that it is worth jeopardizing their relationship with a patient over the ‘relatively minor’ matter of hoped-for antibiotics. Given the increasingly shaky justifications for paternalistic consulting, it is not surprising that the prescription of antibiotics has been described as one of the most uncomfortable prescribing decisions general practitioners make.
Antibiotics and shared decision-making

Charles and colleagues\(^\text{13}\) described the ‘informed choice model’ where the physician is seen primarily as a source of information and decision-making is left entirely up to the patient. However, the use of antibiotics in one individual may cause resistant organisms to colonize their close household\(^\text{57}\) and day care contacts.\(^\text{58}\) High antibiotic-prescribing practices are more likely to submit urine samples infected with resistant organisms.\(^\text{59}\) National studies report an association between levels of antibiotic prescribing and isolation of resistant organisms.\(^\text{60,61}\) There is a sizeable opportunity cost to unnecessary antibiotics: the UK estimated that £77 million could be saved by rational prescribing of antibiotics in primary care\(^\text{62}\) and in the USA, $37.5 million is spent annually on antibiotics for colds.\(^\text{63}\) So clinicians who are concerned about the downside of antibiotic prescribing for immediate contacts and the wider community may resist prescribing according to the ‘informed choice model’. Moreover, patients may simply not want to be burdened with decision-making, especially when they are unwell, and would prefer the clinician to take responsibility for decisions.\(^\text{64,65}\)

Shared decision-making

In contrast to the paternalistic and informed models where information flows from the doctor to the patient, information exchange is ‘two way’ in the shared decision-making model. On the one hand, the clinician provides relevant information about treatment options. On the other hand, the patient provides information about their lived experience of the illness, their values, preferences, lifestyle and knowledge about the treatment. Such an exchange has been called ‘a meeting between experts’: the expert in diagnosis and clinical evidence and the expert in their own body and life situation share their different, but equally valid perspectives.\(^\text{66}\)

The procedures for sharing the process and yet sometimes agreeing to disagree about the treatment decision represent a particular challenge, given differential power relationships in the consultation.\(^\text{67-69}\) A set of skills and steps for shared decision-making has been proposed (see Table).\(^\text{70}\) Actual strategies for successfully negotiating all of these steps in the consultation have not yet been fully described or evaluated. However, illustrative examples of simple questions that could provide a platform for involving patients in health care decision about antibiotic treatment include:

- How would you feel if we talked things through and made a decision together about treatment? (stage 1)
- How do you feel about antibiotics? (stage 2)
- Would you like me to summarize the research evidence as it applies to your unique situation right now (stage 3)
- Would you like information about prevention and self-care, and if so would you prefer to talk about it, take a leaflet or look at an internet site I could recommend? (stage 4)
- How do you feel all of this applies to you? (stage 5)
- Are you happy to talk about treatment and share the decision in this way? (stage 6)

The patient-centred model for consulting, which is now well known in primary care, emphasizes exploring patients’ ideas, fears and expectations about their illness.\(^\text{71}\) The shared decision-making model takes this further by providing a framework for addressing both the patient’s and clinician’s agenda during the management phase of the consultation.\(^\text{72}\) The hope is that the ensuing information exchange might lead the patient to an owned, more informed decision about a treatment option rather than simply being left with a sense of having to accept clinicians’ sapiential opinion.\(^\text{73}\) This new emphasis may provide additional space in the consultation for consideration of wider issues such as the relationship between lifestyle (diet, exercise, smoking, stress management) and immune function.\(^\text{74}\)

There are dangers to promoting this approach: some clinicians might misinterpret shared decision-making as a license to transfer decisional responsibility to the patient and lapse into ‘informed’ or ‘consumerist’ consulting after the portrayal of options. However, shared decision-making involves several steps beyond this stage (Table).

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### Table. Stages and competencies of involving patients in healthcare decisions\(^\text{70}\)

<table>
<thead>
<tr>
<th>Stage</th>
<th>Competency</th>
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<tbody>
<tr>
<td>1</td>
<td>Implicit or explicit involvement of patients in decision-making process</td>
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<tr>
<td>2</td>
<td>Explore ideas, fears and expectations of the problem and possible treatments</td>
</tr>
<tr>
<td>3</td>
<td>Portrayal of equipoise and options</td>
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<tr>
<td>4</td>
<td>Identify preferred format and provide tailor-made information</td>
</tr>
<tr>
<td>5</td>
<td>Checking process: understanding of information and reactions (e.g. ideas, fears and expectations of possible options)</td>
</tr>
<tr>
<td>6</td>
<td>Checking process: acceptance of process and decision-making role preference, involving the patient to the extent they desire to be involved</td>
</tr>
<tr>
<td>7</td>
<td>Make, discuss or defer decisions</td>
</tr>
<tr>
<td>8</td>
<td>Arrange follow-up</td>
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</tbody>
</table>
Consulting in this spirit will be more time consuming, and pressure of time is a frequently cited reason for prescribing antibiotics for viral infections.\textsuperscript{10} A prescription saves time in the short term, antibiotic treatment is associated with more frequent consultations for future similar problems,\textsuperscript{72} and so clinicians ‘create a rod to beat their own backs’ (and the backs of their colleagues).\textsuperscript{10} If the problems of over-prescribing antibiotics are as serious as some suggest,\textsuperscript{76–78} then investing the time necessary for effective shared decision-making may be worthwhile, particularly if self-care options and the potential downsides of antibiotic treatment are incorporated in the information exchange. Importantly, this approach may also come to provide a structure for enhancing physician–patient understanding and building relationships at a fundamental rather than symbolic level. By exploring individual’s ideas, fears and expectations about treatment, clinicians may engage patients about what matters to them as unique individuals rather than using a prescription as a symbol of concern.\textsuperscript{45,79}

Conclusion

The four assumptions that could justify a ‘paternalistic model’ of the consultation appear invalid. Clinicians are uncomfortable with the ‘informed model’, and while many general practitioners would agree with the spirit of the ‘shared decision-making model’, their actual practice may be limited by the lack of explicit, evaluated consulting skills and strategies.\textsuperscript{70} However, this model does appear to provide a framework from which to develop interventions for more effective communication around treatment decisions for respiratory tract infections. Evaluation studies should include not only patients’ satisfaction with care but also measures of the actual process of the consultation, patient knowledge, understanding and ‘enablement’ (enhancing patients’ ability to better manage illnesses themselves).\textsuperscript{80,81} Follow-up should ideally include subsequent patient help-seeking behaviour, carriage of resistant organisms and clinical recovery. Clinician-related outcomes should include not only appropriateness of prescribing decisions but also professional satisfaction.

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References

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