

PASTEUR INSTITUTE
Symposium: Mastering anti-infective therapies

Title: Education and decision making

Professor Roger G Finch

The Nottingham City Hospital & University of Nottingham

Department of Infectious Diseases, Clinical Sciences Building, Nottingham NG5 1PB

Tel: +44 (0)115 8404741, Fax: +44 (0)115 8404742

Email: r.finch@nottingham.ac.uk

Abstract

Education remains central to the prudent and cost-effective use of antibiotics. Increasing professional and public concern over antibiotic resistant organisms emphasises the societal dimension that is necessary for any educational strategy to be successful. Educational theory and practice has moved away from the simplistic and didactic transmission of information, to one in which knowledge, skills, behaviour and attitude are key to best practice. Therefore, traditional educational approaches must adapt to these changes. Examples of current and future undergraduate medical educational programmes that support good antimicrobial practice will be presented. These include a teaching module on antimicrobial chemotherapy given to undergraduate medical students at the University of Nottingham, UK, and a web-based interactive learning module recently developed for the Scottish Medical School.

Antimicrobial chemotherapy module (Nottingham)

This is a taught course which has run since 1979. It is delivered in Year 3 of the medical curriculum as part of an intercalated Bachelor of Medical Sciences degree course. It runs over a period of two weeks and is divided into three sections namely i) General properties of antimicrobial agents; ii) General principles of management; and iii) Antimicrobial chemotherapy in practice. It is positioned conveniently between the pre-clinical sciences and clinical practice years of the medical course. It has proved a popular and effective learning module and has been recommended for adoption in other universities. The course book (Antimicrobial Chemotherapy) is currently undergoing its fifth revision.

Antimicrobial Prescribing for Tomorrow's Doctor

This is an e-learning based project which was developed in conjunction with the Scottish Medical Schools and the British Society for Antimicrobial Chemotherapy and was launched officially in August 2005. It has been developed in accordance with current educational standards and adopts an outcomes based learning approach. The core components of knowledge, skills, attitudes and behaviour have relevance to all healthcare professionals and it is anticipated that with appropriate adaptation, this e-learning resource may be appropriate for non-medical prescribers. The learning module is based around clinical prescribing scenarios with a structured approach to history, diagnosis, prescribing and management needs. It has both online learning resources but also encourages the student to seek out local, national and other relevant guidance which is added to a core learning portfolio. The assessments are also designed for ease of distance learning and in conjunction with non-specialist tutor support.

Postgraduate continuous professional development and life-long learning needs in good prescribing practice could use appropriately adapted models, such as the above. However, an important component of postgraduate education and good prescribing practice is available through the recent expansion of prescribing support material within formularies, guidelines and prescribing policies.

Formularies

Formularies are increasingly more than simply a list of drugs stocked and preparations available within a given institution. They may be national, regional or locally developed and target specific prescribing populations (eg. hospital, community or dental prescribers). Many hospitals have complemented formulary development with the production of guidelines for specific disease management which adds substantially to their usefulness and effectiveness.

Guidelines

The increasing complexity of medicine and desire to improve the quality of care has led to a burgeoning of guidelines, many of which are constructed using an 'evidence based' approach. These require a substantial resource to develop and ensure that they are regularly updated. However, by combining guidelines with formularies and

making them available on line, this provides a useful learning tool, as well as supporting audit and feedback on management. Similarly, standards of care can be assessed.

Antibiotic policies

Antibiotic policies are often designed around specific patient populations, such as those undergoing particular surgical procedures, those on maintenance dialysis, patients undergoing bone marrow transplantation or cancer chemotherapy. The educational value of such policies lies in supporting multidisciplinary team based management and ensuring that standards of care are maintained.

Finally, the need to engage the public by raising awareness and knowledge about antibiotic resistance has led to a variety of national public educational initiatives and campaigns. In developing such campaigns, it is important to identify the audience and have an appreciation of the cultural and psychosocial dynamics that may affect the success of such a campaign. It is also important to gain the support of the healthcare professional in parallel with the public campaign.

As part of the national strategy to control antibiotic resistance, a number of Member States in Europe have organised public educational campaigns. Some, such as the Belgian campaign, was developed in response to concerns about the high rates of antibiotic prescribing in that country, whilst in the UK, the target for improvement was largely in response to the recognition that there was much inappropriate prescribing for predominantly viral upper respiratory tract infections, such as colds and coughs. Both campaigns recognised the importance of targeting the prescribing professional, as well as the public. With regard to the latter, the UK campaign was largely directed at parents and guardians of children, since the rates of viral upper respiratory tract infection are high in this population. It is clear that one marker of a successful campaign is the inclusion of a clear and preferably positive message which can be branded or championed and delivered through a repertoire of printed and media outputs. The benefit of prime time television was clearly demonstrated in the Belgian campaign.

Central to any educational campaign is the need to audit not only the effectiveness of delivering the message, but also to measure the impact on behaviour and practice. The simple expediency of reducing antibiotic prescribing, if continued indefinitely, could lead to negative effects arising from untreated bacterial infections. Some markers currently under review in the UK are hospital admission rates for community acquired pneumonia and mastoiditis.

In addition to public health campaigns, educational initiatives are required for pre-school and school age children in order to ensure future generations are supportive of the public:professional partnership that is essential to support good prescribing practice.

In Canada, the 'Do Bugs Need Drugs' campaign was directed at controlling antibiotic resistant organisms. This was executed by developing a broad based educational programme. This campaign identified the importance of young children as an effective vehicle for not only accepting the message, but transmitting this to peers and parents, which in turn facilitated the process of encouraging prudent prescribing by professionals. In the UK, a specific teaching module aimed at Year 5-9 school children has proved popular with both pupils and teachers and includes a section on antibiotic resistant organisms. In the future, it is hoped to evaluate this programme in the more diverse cultural and educational environment that prevails in Europe.

Further reading:

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