Research Round Up- Antimicrobial Prescribing and Stewardship

Introduction

The last research round up provided you with an overview of some papers relating to prescribing of statins and lipid modification goals in the management of hyperlipidaemia and prevention of cardiovascular disease. This month we will review papers published looking at antimicrobial prescribing all with a connection to and discussion around the role of antimicrobial stewardship and the prescriber.

Factors associated with independent nurse prescribers' antibiotic prescribing practice: a mixed-methods study using the Reasoned Action Approach

This mixed methods study using a reasoned action approach, in the Journal of Hospital Infection aimed to measure nurse independent prescribers' (NIPs) intention to manage patients, presenting with an upper respiratory tract infection (URTI) for the first time, without prescribing an antibiotic and to examine the determinants of this behaviour in order to provide evidence in this under researched area. The authors conducted telephone interviews with 27 NIPs and used the content of these interviews to inform the development of a questionnaire around intention to manage in this presentation. The questionnaire was used in a national survey of NIPs (after testing for validity and reliability) across Scotland. The survey included 184 participants from a mixed urban and rural setting and across primary and secondary care. Information was also gathered about years qualified as a NIP. The authors found that from the information collected it was found that NIPs intended to manage patients, presenting with a URTI for the first time, without prescribing an antibiotic. Key determinants were perceived norm, perceived behavioural control, and moral norm. Significant beliefs were positive social influence from other non-medical prescribers and nurse prescribers the enablers of prescriber experience and confidence. They state the pressure from patients/carers for them to prescribe as a barrier. This pressure finding supports evidence in the medical prescribing literature and suggests NIPs face similar pressures to their medical colleagues.

They conclude that these findings provide reassurance that NIPs intend to prescribe appropriately. The identification of nurse-specific barriers and enablers to this intention should be acknowledged and targeted in future interventions to manage this behaviour.

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Understanding general practitioners' views and experiences of using clinical prediction rules in the management of respiratory infections: a qualitative study

This in press article in the British Journal of General Practice Open, aimed to explore General Practitioners (GPs) views and their experiences of using clinical prediction rules (CPRs) in their decision-making process with regard to managing respiratory tract infections (RTIs). This is an area of high antibiotic prescribing within primary care in the UK and as such there are several CPRs that have been developed to aid decision making. The authors intended to address the gap in the literature around the use of these CPRs in General Practice and to identify any facilitators and barriers to their use. The issue of antimicrobial resistance was a significant driver for the authors and researchers involved.

The research uses a qualitative approach to conduct telephone interviews with GPs working in and in-hours GP setting in the South and South West of England. The interviews were semi structured and designed to elicit views on and use of CPRs for RTIs. In toral 32 GPs participated in the study. The CPRs identified in the study included STARWAVe to help predict hospitalisation in children, CURB-65 to predict community acquired pneumonia, and the Centor and FeverPAIN scores for assessment of acute sore throat. These tools developed to help clinical teams determine who may benefit from an antibiotic prescription and where antibiotic prescribing is not indicated, thereby reducing prescribing and consumption in an appropriate clinical manner. The study found that some CPRs were more commonly used than others. The GPs interviewed stated they used CPRs to help with the negotiated prescribing discussion they had with their patients as well as a confirmation and support tool. It was also seen to aid in documentation of decision making. The participants did highlight concerns with reliance on use of CPRs, these included lack of time, inability of CPRs to incorporate patient complexity, a shift in focus from the patient during consultations, and limited use in remote consultation (during the COVID-19 pandemic).

The authors conclude that there is a place for CPRs but that these need to be intuitive and user friendly and can be easily accommodated by current NHS computer systems to encourage their use in patient assessment and diagnosis as well as clinical decision making. This would allow for their embedding in current practice. They suggest that existing tool should be able to be modified to facilitate their use in remote consultations and other presenting situations.

Hounkpatin, H; Woods, C; Lown, M; Stuart, B; Leydon, G

https://bjgpopen.org/content/bjgpoa/early/2021/06/11/BJGPO.2021.0096.full.pdf

Antibiotic prescribing for respiratory tract infection in patients with suspected and proven COVID-19: results from an antibiotic point prevalence survey in Scottish hospitals

This point prevalence survey published in the Journal of Antimicrobial resistance looked at antibiotic prescribing for respiratory tract infections in Scottish Hospitals between 20th and 30th of April 2020. The study examined patients with suspected or confirmed COVID-19 infection who were in designated COVID-19 clinical areas in 15 NHS hospitals across Scotland. A total of 820 patients were surveyed. A main driver for the study was the evidence that COVID-19 has significantly challenged antimicrobial stewardship and that although bacterial co-infection is infrequently observed with SARS-CoV-2/COVID-19 infection outside of critical care, however, antibiotics are commonly prescribed.

The authors aimed to examine factors associated with antibiotic prescribing for suspected respiratory tract infection (RTI) and evaluate the nature and dynamics of prescribing in hospitalized patients with suspected and proven COVID-19 infection. The data collected included antibiotic prescription, start date, route and oral to IV switch (if occurring). Prescribing was recorded as empirical due to clinical presentation or directed by microbiological confirmation of bacterial infection. Potential factors influencing antibiotic prescribing were recorded as was descriptive clinical data. These recordings included: presence and nature of sputum produced; C-reactive protein results; and chest X-ray.

The research showed that of the 820 patients surveyed 272 (prevalence 33.3%) received antibiotics for suspected RTI on the survey day and 58.8% were SARS-CoV-2 positive. Antibiotic prescriptions were empirical in 91.9% of cases. The most prescribed antibiotics were amoxicillin (24.6%), doxycycline (20.5%) and co-amoxiclav (15%). It was observed that 54.5% of antibiotics prescribed were via the oral route and duration was recorded in 76.7% on wards for a median of 5 days. IV to oral switch occurred after a median of 2 days where observed. The researchers noted that the prescribing of antibiotics was independently and positively associated with an established diagnosis of COPD/chronic lung disease, or a presentation of purulent/bloody sputum, abnormal chest X-ray, and CRP of greater than 100 mg/L. Where nosocomial COVID-19 infection was detected and in patients with a diagnosis of diabetes there were lower levels of antibiotic prescribing for respiratory tract infection. The authors conclude that antibiotic prescribing for suspected respiratory tract infection was commonly observed and predominantly empirical in suspected or proven COVID-19. They suggest that the use of initiatives to reinforce stewardship principles including clinical review, effective use of microbiological diagnostics and better understanding of the role of biomarkers are central to further limit unnecessary antibiotic therapy in COVID-19.

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https://academic.oup.com/jacamr/article/3/2/dlab078/6303600?login=true

Conclusion

Despite a knowledge of antimicrobial resistance and the need for the prescriber to be proactive in antimicrobial stewardship that there is still a worry about inappropriate prescribing as demonstrated by looking at these articles of prescribing for respiratory infections. Prescribers should be confident to prescribe only where clinically indicated and that their decision making can be supported by use of tools such as clinical prediction rules to assist themselves and to communicate their decision to the patient. It is also noteworthy that the presence of COVID-19 still influences antimicrobial prescribing in the absence of microbiological evidence of bacterial co-infection.