Guest Editorial

Time for a new resistance against antibiotics

Resistance of pathogenic organisms to antimicrobial agents can seem far from a clinician’s mind during everyday consultations with patients. A recent systematic review of clinicians’ views about antimicrobial resistance reported that they believed that antimicrobial resistance was a serious (but distant) problem that was mainly caused by patients’ incomplete adherence to prescriptions or self-medicating and was more important for hospital settings and other countries: that is, it was more important for other people. Few clinicians believed that their own prescribing contributed to resistance. There is now compelling evidence, however, that a single course of antibiotics prescribed by a general practitioner increases the risk of its recipient becoming colonised or infected with resistant bacteria, making it more difficult to treat infections, and resulting in further antibiotic use. We now know that the prescribing decisions of doctors quickly and measurably alter the antibiotic flora of individual patients and of the population.

We are now seeing serious effects of antimicrobial resistance in everyday clinical practice: previously rare infections now occur with increasing frequency, causing harm to patients and to our population. The incidence of dangerous Escherichia coli bloodstream infection has nearly doubled in the last decade in Northern Ireland to around thirty cases per week, mirroring the dramatic increase seen in the rest of the UK. About two-thirds of these infections start in the community, most often from a urinary source, and 30-day mortality is 15%. Bacteria that are resistant to carbapenems (broad-spectrum antibiotics of last resort) are no longer strangers to our healthcare settings. When discovered in a clinical or environmental specimen, they prompt a response that consumes staff time and financial resources, disrupting patient care, closing rooms or wards to admissions, increasing the competition for a finite number of isolation rooms, and resulting in other patients being screened for bacteria by rectal swabs to investigate whether they too may have become carriers. Antimicrobial resistance is already causing distress, illness and death for patients, and disruption, increased demands and stress for Health and Social Care staff.

The recent Review on Antimicrobial Resistance led by the economist Jim O’Neill projected vastly increased costs and deaths resulting from antimicrobial resistant organisms over the coming decades. The Review recommended that the amount of ‘inappropriate’ antimicrobial consumption in humans and animals be greatly reduced and that there should be a particular focus on reducing healthcare-associated Gram-negative bloodstream infections. The UK government responded by setting ambitious targets to reduce ‘inappropriate’ antibiotic prescribing by 50%, with the aim of being a world leader in reducing prescribing by 2020 and to reduce healthcare associated Gram-negative bloodstream infections in England by 50% by 2020. The Department of Health (Northern Ireland) has endorsed these aspirations and new collaborative programmes of work are underway to address the factors behind Northern Ireland’s antibiotic use (the highest in the UK by a wide margin) and the factors that lead to healthcare-associated infections (HSS(MD) 6/2017). A new work programme to reduce healthcare-associated infections and to improve antimicrobial stewardship in all Health and Social Care settings in Northern Ireland is led by the Public Health Agency-chaired multi-agency, multi-disciplinary Regional Antimicrobial Stewardship and Healthcare-associated Infection Improvement Board.

It is important that the new effort to reduce harm from antibiotic use is not dismissed as a bureaucratic target conceived in an ivory tower, or as a cost-cutting measure: our profession has, in the past, misunderstood the balance of risk associated with antimicrobial use and we must together find a new equilibrium where prescribers and patients understand that prescribing an antibiotic is not necessarily the safer option when faced with diagnostic uncertainty. The imperative to reduce antimicrobial prescribing comes at a time when the primary healthcare system has been in the news because of practices closing, a recruitment shortfall, and GP representatives reporting that demand currently exceeds capacity of the primary care system. Creating the circumstances that allow healthcare professionals to safely reduce the amount of antibiotics they prescribe is a complex challenge. It will mean designing a system that reduces the incidence of infections in the community through preventive strategies such as vaccination, hygiene and food safety; increasing the capacity of the public to safely self-care for minor illnesses; aiding prescriber decision-making with point-of-care diagnostic testing, where it is appropriate; allowing clinicians enough time to have caring conversations with patients that don’t necessarily end in a prescription for antibiotics; and providing intelligence to professionals about their own antibiotic prescribing and the resistance patterns in organisms from their patients. These changes will take time. Experience elsewhere suggests that expert clinicians may feel that scrutiny of their antibiotic prescribing is intrusive and undermines their professionalism, and we must therefore aim to bring about change in collaboration with clinicians and their representatives. One step in this journey will be the introduction of the Royal College of General Practitioners-endorsed TARGET (Treat Antibiotics Responsibly, Guidance, Education, Tools) toolkit to Northern Ireland. These resources aim to help GPs to safely reduce antibiotic
prescribing and include self-care resources for patients that have been designed using a behavioural science approach. Though a smaller fraction of antibiotics is prescribed in secondary than in primary care, antibiotics of last resort are more frequently used. Patients (and their bacteria) move between these two parts of the complex Health and Social Care system, with decisions in one setting having effects in the other; an open and constructive partnership between all stakeholders will be required to bring about change.

Ten years ago, a major outbreak of *Clostridium difficile* (a disease largely caused by antibiotics) resulted in a significant number of deaths in Northern Ireland. A change in antibiotic prescribing practices was a major factor in ending the outbreak and in the wider decline in incidence of *C. difficile*. We have been here before and succeeded in preventing harm by changing our prescribing behaviour.

This year, World Antibiotic Awareness Week runs from 13-19 November and European Antibiotic Awareness Day is Saturday 18 November. During this week, regional and local events will take place in Northern Ireland to raise public and professional awareness and to allow healthcare teams to share learning about changing prescribing practices. Details of events will be promoted through Health and Social Care organisations and social media. We will need doctors, nurses, pharmacists, allied healthcare, scientific staff and patients to champion the importance of antibiotic stewardship. Contact us by email if you want to get involved.

We have pledged to be Antibiotic Guardians. You can make a pledge too via http://www.antibioticguardian.com.

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