ETHICAL AND LEGAL ISSUES IN HEALTHCARE

The doctrine of double effect: implications for end-of-life healthcare

Cicely Roche has worked in community pharmacy in Canada and Ireland since graduating from Trinity College Dublin in 1983. She holds an MSc in Community Pharmacy from Queen's University Belfast (2001) and an MSc in Healthcare Ethics and Law from RCSI (2007).

Consider the case of conjoined twins Jodie and Mary.[1] The separation of the twins would certainly result in the death of Mary but a failure to separate them was expected to result in the death of both children in a short period of time. The courts were asked to adjudicate in favour of separation.

In order to adjudicate on cases where two or more options are individually convincing yet mutually exclusive, the judiciary relates to general principles in order to provide justification for deciding a case in a particular way. The principle of double effect derives from a doctrine proposed in the time of Thomas Aquinas (1225–1274), which attempts to provide guidelines as to when it is morally permissible to perform an action which has two potential outcomes – one good and one bad. The doctrine distinguishes between consequences intended and foreseen and those unintended but which ought to be foreseen. It is proposed that four conditions are required in order for the doctrine to apply:

1 The act itself must be morally good or at least indifferent;
2 The agent may not positively intend the bad effect and if one could perform the good effect without the bad effect one should do so;
3 The good effect must flow from the action at least as immediately as the bad effect, and the good effect must be produced directly by the action, not by the bad effect;
4 The good effect must be sufficiently desirable to compensate for the allowing of the bad effect.

'Despite its widespread acceptance, it is possible that the doctrine of double effect may be at odds with the ordinary principles of criminal law'. (Jackson, 2006.) We are, indeed, treading a 'fine line' as interpretation of the intention behind the act is often the only means of adjudicating whether or not the doctrine genuinely applies.

Pain management in palliative care inevitably risks being 'at odds with the ordinary principles of criminal law'. By definition, palliative care involves caring for a patient that has passed the stage of curative therapy, and society generally associates this principle of double effect with the use of pain-relieving opiates in palliative care. Our objective in pharmacy is to improve a patient's quality of life by managing medicines usage, constantly balancing between risk and benefit. Every practitioner is acutely aware that each administration of a medicine has both intended benefit and potential harm.

As articulated in the principles of the hospice movement, a dying patient's priorities include that he/she be pain-free. While opioids are still central to analgesia in palliative care, medicines which counteract adverse effects tend to be underutilised and misunderstandings concerning tolerance and risks of addiction are common. Patients depend on carers accurately diagnosing pain levels and analgesia requirements. Understanding of the process of death has become core to legal differentiation between death by the doctrine of double effect and death by euthanasia.

The case of Dr Harold Shipman severely damaged our society's faith in the trusting relationship between a doctor and his patient. In Shipman's case he evaded the processes designed to make available diamorphine for its pain-relieving properties, and instead deliberately used them for their respiratory-depressant side effect to kill in excess of 200 patients. This case exhibits the essence of the potential for evil which resides in the doctrine of double effect.

It is sobering to realise that medicines dispensed from community pharmacies could be used on such a scale of murder. That community pharmacists could inadvertently facilitate such behaviour on an ongoing basis is compelling motivation for seeking changes in the systems and legislation currently in place, which increase the risk of such undetected misuse of medicines in Ireland.

Shipman forged a will for his last victim, making himself the sole beneficiary. The subsequent investigation discovered that he had most likely murdered her and this led to a review of his entire patient list. If he had not forged that will his murders might never have been detected. The pharmacy involved had retained required records and those registers had been 'inspected' by the police as required by legislation – yet the regular dispensing of diamorphine ampoules to Shipman did not arouse suspicion. Indeed, in earlier years, he had been reprimanded in relation to his use of controlled drugs by his professional body, yet neither his peers nor the police were aware of this at the time of his employment in the Manchester area. The case highlights that we ought to pay particular attention to the many aspects of the prescriber entitlements, distribution, dispensing, review and destruction of relevant controlled drugs, which increase the risk that pharmacists could inadvertently partake or fail to intervene appropriately in such misuse of medicines.

The use of opiates in palliative care may also evolve into euthanasia.

> *'Euthanasia is an action or omission with the primary intent of bringing about a patient's death in order to end his or her suffering'* (Letellier, 2003)

Both acts and omissions may qualify a process as euthanasia. The not giving of another medication to compensate for the first drug's adverse effects could be classified as an omission, e.g. naloxone or amphetamines to counteract the respiratory depressant effects of opioids. Inadvertent omission of such additional medications could certainly be reduced by pharmacist intervention.

The case of 'Dr Arthur' provides a further example of the use of medicines in euthanasia. Baby John Pearson was born in 1980, and found to have Down's syndrome. Four hours after his birth Dr Arthur ordered 'nursing care only', which was understood to mean *'cherish, remain with, but no intervention, fed with water and sedated with DF118.'* It is difficult to envisage a healthcare-related justification for giving DF118 at that point in time. Failing that, its use was an 'act' rather than an omission. John Pearson subsequently died. Dr Arthur was acquitted by the trial judge. Despite the fact that the intentions of these two doctors may have been different, the case suggests that Dr Arthur 'misused' medicines in a manner not dissimilar to Dr Harold Shipman.

The identification of medicines as a cause of death is not always straightforward, as commonly used medicines, such as insulin, may end life without the patient displaying obvious signs of having been euthanised. Once a GP certifies a death, autopsy and inquest are avoided. The role of the Coroner's Court is to establish the 'who, when, where and how' of unexplained deaths, although the 'why' is a matter for the criminal courts. The Coroner enquires into the circumstances of any death which is *'sudden, unexplained, violent or unnatural'*, but unless it is brought to his attention that a death falls into one of these categories, there will not be an inquest.

The direct effect of an opiate used to end a life will likely occur within an hour, wherein respiratory depression results in insufficient oxygen to the brain. An indirect effect, wherein respiratory depression brings on bronchopneumonia, will lead to death a considerably longer time after administration of the drug, and so may never be linked to the administration of the drug. The Coroners' Act, 1962, has little power or structure relevant to identifying cases of euthanasia using medicines. The question must be posed as to whether pharmacists have been equipped with the skills to recognise relevant anomalies and, if so, whether they have the knowledge of the workings of the Coroner's Court to take appropriate action.

Pharmacists do not want to unwittingly facilitate the usage of medicines in palliative care to move beyond the ethically acceptable doctrine of double effect. There are a number of areas that must be attended to if we are to equip ourselves with the necessary knowledge, systems and legislation to take this objective seriously:

- Pharmacists must understand the pain process and be in a position to recommend both opioids and alternatives for use in pain relief.
- Templates are required by which controlled drug registers may be audited for signs of unusual trends in prescribing patterns, so that we are in a position to intervene if required. This has become even more important, as a wider group of healthcare professionals are now and may in future be added to the list of prescribers of controlled drugs in palliative care.
- It is especially important to legislate to ensure the safety net of having at least two separate healthcare professionals involved in the provision of controlled drugs to patients; for example, the risk, however small, that the same nurse could both 'prescribe and dispense/administer' controlled drugs in a nursing home scenario.
- Pharmacists must become familiar with the workings of the Coroner's Court and the implications of its not being alerted to cases of suspected euthanasia.
- When patients for whom we have dispensed controlled drugs die, we ought to proactively encourage return of unused drugs for destruction in order to prevent their unsupervised use in the community. In conjunction with this professional duty of care, policy makers must provide pharmacists with a legal means of disposing of unused or out-of-date controlled drugs. It is currently virtually impossible to not breach some piece of legislation in the process of destroying controlled drugs.
- Simple legislative changes ought to require that patients, their carers and those prescribers who collect controlled drugs from a pharmacy, have to sign for receipt. It is absurd that we require patients to sign receipts for DPS prescriptions for 'mere'

financial control reasons, but do not have a corresponding requirement that they sign to track, for safety and audit purposes, who is actually collecting medicines that are so prone to misuse.

- In some other jurisdictions, such as Canada where I previously worked, there is a statutory requirement to return dispensing records of controlled drugs, electronically, to a central repository every 15 days. This was so that unusual prescribing trends, double doctoring, etc. could be electronically supervised. Current 'wisdom' here suggests that Data Protection legislation impedes the introduction of such a system but it may be that 'wisdom' has not been entirely tested on this matter.

The use of medicines poses risk and there will be no system that can guarantee identification of all cases of misuse. The line between the doctrine of double effect and euthanasia will always be at risk of breach. However, it is time that pharmacy addressed the ethics of patient care at end of life, in the context of the environment in which we actually practise, so that the implications of the doctrine of double effect can be meaningfully interpreted by practising pharmacists.

cicelyroche@eircom.net

References ~

1 Re A [2001] Fam 147 CA
2 Regina v Arthur case (Euthanasia & Clinical Practice (1984) report of a working party, UK)

Bibliography

(i) Jackson, E. (2006) Medical Law. Text, Cases and Materials. Oxford, Oxford University press (p922).
(ii) Letellier, P. (2003) Council of Europe.
(iii) O'Neill, B., and Fallon, M. (1997) ABC of palliative care: Principles of palliative care and pain control. *BMJ* 315: 801-804; Sept 27.
(iv) Smith, Dame J. Shipman Inquiry. 2002–2005.

COMMUNITY SPIRIT

AAT deficiency and echinacea – applying knowledge to patient care

***Colin Deeny** is a community pharmacist based in Donegal. He has an interest in the development of professional pharmacy practice. In addition he has particular interest in respiratory care and the causes and effects of hyperventilation.*

Recently, one of my patients enquired about taking echinacea to help prevent colds. They explained that they have emphysema caused by alpha-1 antitrypsin (AAT) deficiency, and asked for my advice about using echinacea as a preventative measure.

For those who may not be familiar with this condition, I'll briefly outline its aetiology and explain why I recommended to this patient that echinacea may not be a useful and safe treatment for them.

Alpha-1 antitrypsin (AAT) deficiency, often also called alpha-1, is an hereditary disorder that usually causes lung damage, resulting in emphysema. This commonly occurs by the third or fourth decade of life. There is also an increased risk of liver disease in AAT deficiency, which develops most often in childhood, although this is less common. The condition is characterised by decreased levels of the serum protein alpha-1 antitrypsin (AAT), which is a protein produced by the liver to protect the body from damage caused by the protease enzyme neutrophil elastase. AAT is the primary blocker (inhibitor) of this enzyme. Neutrophils are the first cells recruited to the site of an infection, where they act to engulf bacteria by phagocytosis, releasing several anti-bacterial compounds that use both oxidative and non-oxidative methods of attack. The powerful serine protease, neutrophil elastase, is one of those anti-bacterial compounds that are clearly involved in destroying bacteria. It is able to attack the outer membrane protein of the bacteria. However neutrophil elastase, equally, has the capability of degrading extracellular matrix proteins belonging to the host (the body). AAT forms part of a fine balancing act, tightly regulating the activity of the protease enzyme. Without the protective effect of AAT, neutrophil elastase causes lung damage leading to emphysema. Thus AAT deficiency leads to deterioration of lung function over time. People with AAT deficiency have an increased risk of early-onset chronic obstructive pulmonary disease (COPD).

Infection may lead to increased neutrophil activation and thus increased neutrophil elastase release, which will hasten lung damage progression in people with AAT deficiency. They are therefore advised to reduce their chances of getting infections, for example by avoiding people known to have respiratory bacterial or viral infections.

Now, given this fact it is not surprising some patients may think that taking echinacea may help. They may assume that it may prevent infection and the progression of their disease. However there is some evidence that echinacea acts by increasing the number and the phagocytic activity of neutrophils in vivo[1,2,3] (although at least one in vitro study suggested that neutrophils are not activated by echinacea[4]). And that is the crux of my reason to suggest caution.

For if echinacea does act by increasing the number and the phagocytic activity of neutrophils, it will also most likely cause an increased release of neutrophil elastase, which in turn will increase the rate of lung tissue damage and disease progression. This is all theoretical of course but hence the note of caution.

Since we are on the subject of AAT deficiency, let me afford some time to discuss its diagnosis and treatment. Recent evidence suggests that AAT deficiency is not a rare disease but rather is under-diagnosed.[5,6] An epidemiological survey estimates that 2.5% of the world's population are carriers, suggesting it may well be the most common single-gene, hereditary disease in humans.[6] Both parents must be carriers for the AAT deficiency to develop. While it is most common in caucasians, it has been identified in all racial subgroups worldwide. However, as the incidence differs among different ethnic groups, it is difficult to estimate the prevalence in any given country. That said, it has been estimated that in Ireland 1,200 people (3:10,000 of population) have the condition, with only 10% diagnosed.[7] This is a similar prevalence to that of the better-known genetic disease Cystic Fibrosis.

The condition remains under-diagnosed worldwide. At present, diagnosis is most often made after a patient initially presents with symptoms and, as such, there is already disease progression. Patients usually present with either what appears to be chronic asthma or emphysema. Diagnosis of AAT deficiency can be made by measuring the serum alpha-1 antitrypsin concentration or by genetic analysis. Abnormal human genes are rarely absolute predictors of the development of disease. However abnormal genes predict risk of disease and as such early detection is desirable.

Once the condition is diagnosed, patients are advised to adopt avoidance therapy. As discussed already, patients are advised to reduce their chance of getting infections. The same advice also applies to avoiding chemical and particulate environmental agents that may cause lung damage or activate neutrophils. Exposure can result in both lung and liver disease as well as other adverse health effects. This includes occupational exposure to hazardous agents such as chemical irritants, toxic fumes, organic particulates, and pathogens. In particular, patients are advised not to smoke and this is considered the decisive risk factor. When compared to those with the condition who continue to smoke, those who stop have a reduced annual decline in lung function and an increased survival rate.[8, 9, 10] In addition, patients are advised to avoid excessive alcohol consumption as it may hasten AAT deficiency-associated liver damage.

If emphysema or COPD have already developed, then the usual treatment for patients with these conditions will apply. A further option is substitution or augmentation therapy. The treatment, which has to be lifelong, does not cure the disease, but may slow its progression. This involves slow intravenous infusion of human AAT. At present this is derived from human blood donors and has been screened for viruses (Prolastin). Aerolised human AAT is being examined for inhalation therapy. Also recombinant AAT, while not yet commercially available, is in the pipeline. However this may well be superseded by gene therapy. Some companies are already studying this option. The aim is to achieve adequate levels of the gene on a viral vector so as to produce in vivo therapeutic or normal levels of AAT.

In general, of course, echinacea is considered a pretty safe herb. However, there are a few more theoretical contraindications that have been noted. It should probably be avoided by patients with chronic progressive illnesses that are mediated by the immune system such as rheumatoid arthritis, multiple sclerosis, tuberculosis and collagen vascular disease.[11] However, it should be pointed out that, as with AAT deficiency, these remain theoretical contraindications, as there have been no studies undertaken to prove or refute them. And just for the record, echinacea should be used with caution in atopic individuals, especially those with an allergy to other members of the daisy family. This includes, for example, ragweed or chamomile.

Now, returning to my patient with AAT deficiency who wanted to buy echinacea. Their assumption that echinacea may help was understandable. Furthermore there are no warnings or contraindications about AAT deficiency mentioned on the packaging of any echinacea products that I have come across. Nor indeed could I find any mention about this possible contraindication in any literature about echinacea until I suggested it.[12] This raises an important point. Without a doubt, all pharmacists will agree that continuing professional development is imperative for continued professionalism. Medicine and pharmaceutics are always changing and being developed. Furthermore, we cannot necessarily rely solely on what we are taught or have learnt from others within that context.

contd. on next page