Substance misuse: anabolic steroids e-lecture

CPPE
CENTRE FOR PHARMACY POSTGRADUATE EDUCATION

Transcript

Slide 1
Welcome to this CPPE e-lecture on Substance use and misuse – Anabolic steroids. The purpose of this e-lecture is to complement the other online learning available on the CPPE website around substance use and misuse.

Slide 2
By the end of this e-lecture you will be able to:

- describe the use of anabolic steroids and their side effects
- explain the reasons for concurrent use of other medicines
- identify what equipment is required when providing a needle and syringe programme
- evaluate the harm reduction advice you would give to anabolic steroid users.

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So why is this important? Data from the Crime Survey for England and Wales[1] conducted in 2016 indicates that the estimated number of 16-59 year olds reporting lifetime use of anabolic steroids has increased from 194,000 in 2005/06 to 271,000 in 2015/16.

People who take steroids are not a homogenous group of people. These drugs are used by a variety of people and motivations for use are often complex. The use of anabolic steroids is often related to aesthetic outcomes, though athletic performance and non-competitive bodybuilding are also common motivations.

Users of image- and performance-enhancing drugs, such as steroids, may not perceive themselves as a 'drug user' as they are not using psychoactive drugs or accessing needle and syringe schemes. Their underlying belief may be that they are using these substances to improve their body image, which is different to people who inject substances such as heroin or cocaine. In addition, they may perceive their risk of acquiring a blood-borne virus as low as they are only sharing equipment with friends. Healthcare services should be aware that this might actually mean this population has increased risk and provide appropriate non-judgmental services that are responsive to the specific needs of these individuals.

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Anabolic steroids are one of a group of misused substances often referred to as image and performance enhancing drugs or IPEDs. IPEDs also include melanotan, Botox and growth hormones, but this e-lecture will focus mainly on anabolic steroids. It should be noted that people may use a mixture of IPEDs. They can be administered by intramuscular (IM) injection, taken orally or a combination of both routes; with all routes carrying associated risks.

Anabolic steroids are classified as Schedule 4 controlled drugs, putting them in the same classification as drugs such as benzodiazepines. They carry Class C penalties which means that supplying anabolic steroids can result in up to 14 years in prison plus a fine; however it is not an offence to possess anabolic steroids for personal use.

Anabolic steroids are used to increase skeletal muscle mass and physical strength whilst reducing body fat. The majority of anabolic steroid users are male, as women are more likely to use other IPEDs such as melanotan.[2] Anabolic steroids are used to decrease fatigue and increase stamina, meaning people can undertake longer and more difficult training sessions, but their use is associated with a number of harmful side effects.

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The side effects of using steroids may include acne, depression, increased aggression, gynaecomastia and changes in sex drive.

In addition, the long-term side effects of steroid use may include hypertension, ischaemic heart disease, liver damage and renal problems. In young people, side effects of steroid use may include stunted growth, interruption of puberty and emotional difficulties.

Tolerance and physical dependence do not occur as a result of use, instead, users may fear the negative physical effects after cessation of the drugs.

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Anabolic steroids are normally used on a 'cycle'. This means that the steriods are used for up to 12 weeks in combination with periods of very intense physical training, termed 'on cycle', and then stopped for the same length of time, termed 'off cycle', then started again. During the cycle a number of other drugs are used, either to enhance the effects of the steroids or to counteract their negative effects. Anabolic steroid cycling is said by users to avoid the long-term negative effects, while maximising the positive effects, although there is no scientific evidence for this. Users also believe cycling prevents tolerance to steroids.

In addition, anabolic steroids are often taken together, called 'stacking', sometimes in quite complicated regimens over the cycle period. Stacking allows for lower doses of each drug, again to minimise the side effects and users believe stacking will also provide additional, or synergistic effects. However, it does introduce the posibility of drug interactions and this problem can be compounded by the use of counterfeit drugs. The dosages used vary quite considerably and are often well in excess of the recommended medical doses.

During cycles, the amount of drug taken is gradually increased to a maximum, known as 'pyramiding'. The amount is then gradually reduced or 'tapered' towards the end of the cycle. If a drug becomes ineffective over time, called 'plateauing', a different drug is used.

'Blast and cruise' is a term used for when the user has no off cycle. The blast is a high dose followed by the cruise phase which is a lower maintenance dose. People may use this regimen if they have a psychological fear of coming off steroids.

An additional risk factor in the use of anabolic steroids is that people obtain them from a variety of sources. Many of the substances available via the black market are counterfeit and so will not be subject to rigourous quality assurance standards. These counterfeit drugs may contain unknown ingredients or have been produced in a non-sterile environment.

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There are a number of other drugs that can often be used in conjunction with anabolic steroids, either to accentuate their effect or counteract their side effects. These include:

- insulin – to promote muscle growth. In people without diabetes, this raises the concern of hypoglycaemia
- hypnotics – to counteract insomnia caused by the steroids
- human growth hormone or somatotropin – this is used to promote muscle growth and fat loss and strengthen tendons. Its usage is now as common as steroids

- oestrogen antagonists, such as tamoxifen. These are taken by male steroid users to counteract the development of gynaecomastia
- captopril – is used to reduce body fat and become more sensitive to insulin, in addition to its diuretic effect
- diuretics are used to counteract fluid retention caused by steroids and enhance muscle definition
- antibiotics and retinoids are used to counteract the acne-inducing side effects of steroids
- male users of steroids use human chorionic gonadrotrophin or HCG to restore spermatogenesis, which is effectively suppressed by testosterone
- erythropoietin or EPO is used to raise the capacity of the blood to carry oxygen, enhancing performance
- nalbuphine or Nubain is used to manage the pain caused by training injuries and overexertion
- stimulants such as amphetamines and ephedrine are taken prior to a workout to allow longer training. People also believe they help to burn fat, based on the fact that they cause release of fatty acids from adipose tissues.

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Pharmacy-based needle and syringe programmes provide needles, syringes, sharps bins and other injecting paraphernalia, although much of the paraphernalia such as spoons and acid are not required by people who use steroids.

In addition they should also provide:

- advice on the risks of injecting
- referral to blood-borne virus screening, vaccination and treatment services
- other healthcare advice and services in areas such as alcohol, smoking and safer sex

The services offered by each needle and syringe programme varies between individual pharmacies and from area to area in order to best meet local need. Equipment is provided free of charge to adult injecting drug users, usually on an anonymous basis.

If you work in a pharmacy which provides a needle and syringe programme, you need to consider the requirements of people who inject steroids as they have different needs with regard to sizes of needles and syringes, as well as suitably tailoring your advice about safer injecting and harm reduction.

People injecting anabolic steroids will need a wider needle (smaller gauge) for a number of reasons. Steroids are oil-based drugs and are therefore more viscous; they are injected in larger volumes by IM injection; and there is a risk of the needle breaking when inserted into a large muscle. If anabolic steroids are being injected, they must not be injected intravenously, but by IM injection which requires a longer needle.

IPED users also have a tendency to visit services fewer times a year and collect large numbers of syringes in a single visit. Secondary distribution ie, the distribution of injecting equipment to other users often occurs. Pharmacy staff should not discourage these clients from taking equipment but should encourage those people to use the service if possible so safe injecting advice can be given.

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The size and type of needle and syringe required will be a personal choice, dependent on the drug and the site of the injection, and where possible clients should be offered a choice of sizes. Exactly what is available will vary from area

to area and some areas may have specific IPED packs for pharmacies to distribute, but generally there will be an option to use a complete unit or to choose syringes and needles separately

To reduce the damage caused to veins, people who are injecting opioid and stimulant substances should be advised to choose narrower needles. However, as they are injecting IM, anabolic steroid users will generally use green 21 gauge 1.5" needles for adding the oil diluent to a powdered steroid followed by a blue 23 gauge 1" needle for injection.

Various posters are available to encourage clients to think about their choice of needles. One such example is shown in the slide and is taken from the exchange supplies website.
www.exchangesupplies.org/shopdisp_needle_size_poster.php

Users may need a variety of needles and syringes as they may be injecting concurrent drugs via different routes, such as insulin or growth factor subcutaneously.

Clients should always be encouraged to return used equipment in a sharps bin to the pharmacy with a specialist needle and syringe programme.

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The advice pharmacy teams offer to anabolic steroid users will be different to the advice given to opioid users as steroids are injected IM, but advice should follow the principles of safer injecting, including encouraging good hygiene and explaining the risks in sharing equipment. This is important as people who inject steroids may believe that the risk of blood borne viruses such as HIV or hepatitis is limited to those who inject heroin or other opioids.

Advice on preparation of drugs for injection includes:

- always use sterile injecting equipment, never share, even with drawing up needles
- use appropriately sized needles, although the length needed will depend on the site of injection and the body mass of the user
- use the smallest dose of steroids, do not adopt other users' regimens

Advice on injection sites includes:

- large muscles are preferable, such as buttocks or outer thigh, with upper arm being the next best choice
- rotate sites and do not use an area where there is a lump

Advice on injecting technique includes:

- wash hands prior to injection
- injection of steroids must be IM and not intravenous
- the site should be thoroughly cleaned with soap and water
- relax the muscle, loosely hold the muscle, and then insert the needle with a jabbing motion at 90 degrees. Inserting the needle slowly is more painful and causes more tissue damage
- insert the needle about three-quarters of the way into the muscle; if it does not go in far enough it could cause an abscess; if it goes in too far it may not be easy to remove if it snaps
- pull back the plunger, if there is no blood then slowly inject
- remove the needle slowly and massage the site to disperse the drug

Other advice for steroid injectors includes:

- spend adequate time on training, nutrition and sleep
- limit the length of 'on cycles'
- know the dangers of recreational drug use, especially cocaine as there is some evidence of a high prevalence of use in some groups of anabolic steroid users
- be aware of side effects and at the first sign of them, discontinue use and seek medical advice
- if drugs are needed to treat the side effects of steroid use, it means their dose of steroids is too high
- encourage IPED users to inform their GP (and other health practitioners) of any anabolic steroid use, so that appropriate health monitoring can take place

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To find out more information on how to develop your knowledge and services for this population we have provided some resources on this slide. Accessible hyperlinks can be found in the transcript for this e-lecture.

The first is a website developed by Public Health Wales to provide reliable and evidence-based information and advice to reduce the harms associated with the use of IPEDs.
www.ipedinfo.co.uk

The second link is to their most recent survey of UK wide IPED use, analysing trends in the use of these substances as well as lots of practical information. The report aims to summarise the currently available evidence and knowledge around IPED use, examine the challenges faced by drug service providers working with IPED users, and look at how we can better work with this group.
www.wales.nhs.uk/sitesplus/documents/888/IPED%20report%202017.%20FINAL.pdf

The *Lifeline* project was a UK-based project working to reduce harm, promote recovery and challenge inequalities linked to alcohol and drug misuse. The link is to a literature review published in 2016 which explores demographics and risks associated with steroids and also looks at other IPEDs such as smart drugs, Botox and tanning drugs.
www.drugsandalcohol.ie/26484/1/Lifeline-IPEDsReport-November2016.pdf

Harm Reduction Works is a campaign as part of the Department of Health publication Reducing Drug Related Harm: an action plan. There is information and resources which can be ordered in order to be used as education materials.
www.harmreductionworks.org.uk/index.htm

Exchange supplies is a social enterprise which was established to supply products, information and services to improve and prolong the lives of people who inject drugs. Their posters can be read online as well as ordered as hard copies.
www.exchangesupplies.org

KFx is an independent website, run by a drug worker, which provides free education resources about all types of drug use. The link is to their performance and image drugs resource pack which is a practical document intended to assist drug workers and needle exchange workers in providing advice and information.
www.kfx.org.uk/resources/PID2016v4.1.pdf

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This slide contains links to national guidelines, which will provide further information regarding support and treatment for people who use IPEDs. Again, accessible hyperlinks can be found in the e-lecture transcript.

The first is the Department of Health's guidelines on the clinical management of drug misuse and dependence. This is a comprehensive document giving advice about all types of drug misuse. Section 7.8 focuses specifically on image and performance enhancing drugs, giving information on the risks and the limited options for treatment.
www.gov.uk/government/publications/drug-misuse-and-dependence-uk-guidelines-on-clinical-management

The advisory council document is a report which considered the legal and social aspects of anabolic steroid use and made a number of recommendations, including around harm reduction.
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/119132/anabolic-steroids.pdf

Finally the NICE guidelines are relevant for any pharmacy providing, or looking to provide, a needle and syringe exchange service. There are a number of recommendations about how these programmes should be offered and run, and there is concise information regarding IPEDs.
www.nice.org.uk/guidance/ph52/resources/needle-and-syringe-programmes-pdf-1996415046853

Slide 13
Now you have worked your way through this e-lecture we will revisit the learning outcomes.

You should now be able to:

- describe the use of anabolic steroids and their side effects
- explain the reasons for concurrent use of other medicines
- identify what equipment is required when providing a needle and syringe programme
- evaluate the harm reduction advice you would give to anabolic steroid users.

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Having come to the end of this e-lecture, you may want to explore more learning around substance use and misuse. There are four modules of e-learning on the CPPE website, and an e-assessment. There is also the substance misuse gateway page where there are plenty of links to other resources.

You may want to use this learning to complete a Declaration of Competence – again, visit the CPPE substance misuse gateway page to find out more: www.cppe.ac.uk/gateway/substance

Take some time to think about what you have learnt and how we as pharmacy professionals can support people who use anabolic steroids. Make a plan of how you will implement what you have learnt from this e-lecture and the resources given on the previous slides. You may decide to complete a revalidation record on how this learning has benefitted the people using your services.

References for this document

1) The Home Office. *Drug misuse: findings from the 2016/17 Crime Survey for England and Wales.* 2017. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/642738/drug-misuse-2017-hosb1117.pdf
2) Begley E, McVeigh J, Hope V. *Image and performance enhancing drugs: 2016 national survey results*. Public Health Institute. 2016 www.wales.nhs.uk/sitesplus/documents/888/IPED%20report%202017.%20FINAL.pdf

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