Care of patients using progestogen-only injectables

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WHY WAS CHANGE NEEDED?

There has long been uncertainty as to how the continued use of the contraceptive injection depot medroxyprogesterone acetate (DMPA) affects bone mineral density (BMD). DMPA inhibits ovulation.[1] Hence women on long-term DMPA may have relatively low estradiol levels, and some experience estrogen deficiency symptoms. Estrogen is integral to bone health.[2] However, low serum levels of estradiol are not reliable indicators of BMD.[3]

WHAT NEEDED CHANGING?

A systematic review by the National Institute of Health and Care Excellence[4] concluded that DMPA use is associated with a small loss of BMD, but it appears that this recovers to normal or near normal when DMPA is discontinued. At present clinicians are advised to use DMPA judiciously. A risk–benefit equation should be undertaken for every patient to help them choose the most appropriate method of contraception. For women who are at risk of osteopenia or osteoporosis, methods other than DMPA may be preferable.

Two particular groups of patients represent higher risk groups for poor bone health and DMPA. The first are young teenagers who have not yet achieved their peak bone mass, and the second are older women (aged over 40–45 years) who have been using DMPA and who are now approaching menopause.

The 2014 Faculty of Sexual & Reproductive Healthcare (FSRH) guidance on the use of progestogen-only injectable contraception states that DMPA can be used in young teenagers, if other methods are unsuitable or unacceptable [UK Medical Eligibility Criteria Category 2 (UKMEC 2)].[1] Regarding older women, use of DMPA in women aged over 45 years is also permitted (UKMEC 2);[1] however, uncertainty about how to manage long-term DMPA use persists.

The FSRH recommends "consulting local protocols for referral criteria" but where can clinicians find such a helpful protocol?

WHAT CHANGE WAS MADE?

In 2008, Salisbury Department of Sexual Health adopted a protocol for care of patients on DMPA (Cyrus Cooper, personal communication, 2005). This protocol had been developed with Professor Cyrus Cooper, Dr Gill Pearson and Dr Carolyn Sadler at Southampton University Hospital, all of whom have a special interest in osteoporosis, and this has been in use in the Department of Sexual Health for 7 years. This is an integrated community sexual health service, based at Salisbury Hospital.

This protocol states:

1 That each patient requesting a DMPA injection will have a risk assessment undertaken (Table 1). If the patient has one strong, or two moderate risk factors for osteoporosis, they will be offered dual-energy X-ray absorptiometry (DXA).
2 If the DXA scan shows osteopenia/osteoporosis [see Appendix 1 for World Health Organization definitions],[5] the patient will have a medical consultation, other osteoporosis risk factors will be considered/addressed, and the patient will be strongly encouraged to consider an alternative contraceptive method.

HOW WAS THIS CHANGE EVALUATED?

In June 2015, an Audit of Care of Patients on DMPA[6] was performed. A total of 36 DXA scans had been requested over a 2-year period from 1 December 2013 to 1 December 2015. Of these, 15 were for patients on long-term DMPA, who met the criteria for a DXA scan from the protocol.

13/15 (86.6%) patients had one strong risk factor for osteoporosis. All 13 had had more than 6 months' amenorrhoea. 3/15 (20.0%) patients had two moderate

Table 1 Assessing risk factors for osteoporosis (Cyrus Cooper and Gill Pearson, personal communication, 2005)

Strong risk factors	Moderate risk factors
History of >6 months secondary amenorrhoea particularly if associated with anorexia nervosa (not including breastfeeding)	Family history (particularly of maternal hip fracture) Smoking Excessive alcohol intake (>21 units/week) Low BMI <20 kg/m^2
Oral steroid use for >3 months	A sedentary lifestyle
Previous low-impact fracture	One or more strong risk factors? Two or more moderate risk factors? Inform the client of a possible risk of osteoporosis if continuing with DMPA
Certain medical conditions (e.g. malabsorption, thyroid disease, rheumatoid arthritis, chronic liver disease)	
Prolonged immobility	

BMI, body mass index; DMPA, depot medroxyprogesterone acetate.

risk factors for osteoporosis, these being smoking and low body mass index (BMI).

The audit showed that 7/15 (46.7%) patients had osteopenia at the L/S spine and 3/15 (20.0%) had osteopenia at the hip (Table 2).

As a result of the DXA scan findings, and after appropriate consultation and discussion, 8/15 (53.3%) patients chose to discontinue DMPA and use a different method of contraception.

WAS THIS CHANGE BENEFICIAL?

One of the biggest difficulties facing clinicians is coping with uncertainty. This protocol provides a clear and logical way to assess women on DMPA. The protocol identifies those women with risk factors for lowered BMD, based on lifestyle and medical factors. Notably, these are separate risk factors from simply the continued use of DMPA.

Whereas there is no clear case that long-term use of DMPA is unsafe in terms of bone health, if the patient had chosen a different method of contraception over the same time period, her BMD may have increased, not decreased.

As peak bone mass is achieved between the age of 20 and 25 years, care of young people on DMPA is very important, as is ensuring optimal bone health before natural bone demineralisation at menopause. This protocol aids management, particularly for such higher risk groups.

A DXA scan in Salisbury costs £70 (Salisbury Department of Radiology, personal communication, 2015). A DXA scan would be performed no more than once every 5 years, and only on women who meet the criteria in the protocol. The potential savings from prevention of even one future case of osteoporosis would seem likely to justify this expense.

Table 2 Bone mineral density (BMD) of study patients on depot medroxyprogesterone acetate

BMD	T score L/S spine	T score hips
Normal	8	12
Osteopenia	7	3
Osteoporosis	0	0
	Low BMD 7 (46.7%)	Low BMD 3 (20.0%)

Clinicians are increasingly being told to refer their clinic patients back to their general practitioner (GP) for investigations. When seen within sexual and reproductive health (SRH) clinics, as the clinicians responsible for the contraceptive care of these patients on DMPA, there is a strong argument for continuing to request and monitor their bone health, from within the department. Any regular monitoring/investigation related to the contraceptive method in use is surely the responsibility of the health professional who is doing the prescribing. For example, patients on combined hormonal contraception are not sent back to their GP to have their blood pressure measured.

To run a safe, efficient service, and keep control of appropriate use of DXA scanning, as well as supporting decision making and further management, it surely seems most appropriate that SRH DMPA patients are managed for their DXA scans within a specialist SRH service. Indeed, perhaps GPs should be referring these patients to SRH clinics for assessment, monitoring and review, and not the other way round?

Of note, this protocol has been reviewed recently by Professor Cooper and his team, and no changes have been requested.

ADVICE TO OTHERS CONSIDERING CHANGE

Many clinicians are still bewildered about how to manage this clinical conundrum. This protocol has helped streamline care for patients on DMPA in Salisbury. Appropriate use has resulted in reassurance for some users, who can continue to use DMPA without due concern. For others it has highlighted relatively poor bone health and helped support what are probably more favourable decisions on contraceptive use. We would encourage services to consider adopting this protocol.

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Competing interests None declared.

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Appendix 1 World Health Organization definitions for osteopenia and osteoporosis[5]

World Health Organization Definitions of T Score

T Score: Most commonly, dual-energy X-ray absorptiometry (DXA) test results are compared to the ideal or peak bone mineral density (BMD) of a healthy 30-year-old adult, and are given as a T score. A score of 0 means the BMD is equal to the norm for a healthy young adult. Differences between the patient's BMD and that of the healthy young adult norm are measured in units measured as standard deviations (SDs). The more SDs below 0, indicated as negative numbers, the lower the BMD and the higher your risk of fracture.

Normal	T score at or above −1.0
Osteopenia	T score at or between −1.0 and −2.5
Osteoporosis	T score at or less than −2.5