

Evaluation of Subcutaneous Contraception for Patient Self-Administration at North Florida/South Georgia Veterans Health System

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Background: Depot medroxyprogesterone acetate (DMPA) is an injectable progestin-only contraceptive available in intramuscular and subcutaneous formulations. Initially, DMPA required administration by a health care professional. The World Health Organization now recommends patients be offered the option to self-administer injectable contraception using the subcutaneous form of DMPA (DMPA-SC). Self-administered DMPA-SC removes barriers to administration, increases patient autonomy, and improves contraceptive continuation rates.

Observations: This medication use evaluation assessed the impact of an initiative at North Florida/South Georgia Veterans

Health System (NFSGVHS) to offer patients self-administered DMPA-SC. A retrospective chart review of electronic health records was conducted for patients who received ≥ 1 outpatient prescription for DMPA-SC from June 1, 2022, to July 1, 2023. Forty patients initiated self-administered DMPA-SC. A subgroup of patients were contacted via telephone as a follow-up to determine if there were unmet needs for ongoing contraceptive care.

Conclusions: The uptake in prescribing suggests that clinicians and patients have embraced self-administration of DMPA-SC within the NFSGVHS.

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Medroxyprogesterone acetate is an injectable medication indicated for contraception and management of endometriosis-associated pain in females of reproductive age.¹ Medroxyprogesterone inhibits gonadotropin secretion, which prevents follicular maturation and ovulation. This leads to endometrial thinning and a contraceptive effect. Adverse drug reactions (ADRs), such as weight gain, menstrual bleeding irregularities, and bone loss appear to be dose- and time-related. Two formulations of medroxyprogesterone acetate are available: 150 mg depot medroxyprogesterone acetate intramuscular (DMPA-IM) and 104 mg DMPA subcutaneous (DMPA-SC).² Originally, medroxyprogesterone acetate injections required administration by a health care worker. While the current labeling for DMPA-SC still indicates a requirement for administration by a health care worker, data show that the medication can be safe and effective when self-administered.³

SELF-ADMINISTERED CONTRACEPTION

The 2019 World Health Organization (WHO) guideline on self-care interventions recommends making self-administered injectable contraception available to individuals

of reproductive age.³ The WHO recommendation is based on evidence from the Depo Self-Administration Study, which included 401 patients randomized 1:1 to receive self-administered or clinic-administered DMPA-SC. This study concluded that self-administration improved continuation of contraception.⁴

The North Florida/South Georgia Veterans Health System (NFSGVHS) is the largest US Department of Veterans Affairs (VA) health care system, serving > 22,000 female veterans. All primary care practitioners (PCP) have been trained in women's health (WH).

The WH patient-aligned care team (PACT) clinical pharmacy practitioner (CPP) proposed using DMPA-SC for outpatient self-administration to increase access, improve patient satisfaction, and reduce burden on patients and nurses for administration appointments. The Pharmacy and Therapeutics Committee (P&T), WH Medical Director, and Chief of Gynecology approved the proposal. DMPA-SC was added to the ordering menu with order sets. The order set included instructions that outlined the 12-week dosing interval, instructions to contact the prescriber if the injection was > 2 weeks overdue (aligning with dosing recommendations for administration every 12 to 14 weeks), and an

optional order for a home pregnancy test if necessary. These instructions were designed to ensure proper self-administration of the medication and timely follow-up care.

The gynecology and PACT health care practitioners (HCPs), including physicians, pharmacists, nurses, and medical assistants, received DMPA-SC education, which consisted of a review of medication, ADRs, contraindications, and administration. An NFSGVHS procedure was developed to ensure patients received self-administration education. DMPA-SC prescriptions were mailed to patients with scheduled nursing appointments. The patient would then bring DMPA-SC to the nursing appointment where they received administration instruction and completed the first injection under nurse supervision to ensure appropriate technique. Patients were offered supplementary educational documents and a calendar to keep track of injection days. The patients were responsible for ordering refills and administering subsequent injections at home. Once all stakeholders received education and order sets were in place, prescribers and nurses could begin offering the option for initiation of self-administered DMPA-SC to patients. All conversions or new prescriptions were initiated by prescribers as a part of usual care.

Medication Use Evaluation

A medication use evaluation was conducted about 1 year after the rollout to assess use, adherence, and impact of DMPA-SC for patient-self administration as a new contraceptive option for NFSGVHS patients.

A retrospective chart review was conducted for patients dispensed DMPA-SC from June 1, 2022, to July 1, 2023. Baseline body mass index (BMI), recorded prior to initiation of DMPA-SC, was compared with the most recent BMI on record at the completion of the study to evaluate weight change. Nursing visit attendance for the first injection was also assessed. Adherence was evaluated by reviewing the date of the initial DMPA-SC prescription, the date of the patient's first nursing visit, and subsequent refill patterns. A 2-week margin of error was established to account for the flexibility within the recommended dosing interval and delays in postal service delivery.

TABLE. Depot Medroxyprogesterone Acetate Subcutaneous Use in Study Population (N = 40)

Criteria	Results, No. (%)
Adherence to nursing appointment protocol	
Yes	28 (70)
No	12 (30)
Continued therapy	31 (100)
Refilled on time	
Yes	25 (81)
No	6 (19)
Documented discontinuation/not refilled on time reason	
Total	15 (100)
Switched to intramuscular formulation	5 (33)
Adverse drug reaction	4 (27)
Forgetfulness	2 (13)
Discrepancy found in chart review	2 (13)
Hospitalized	1 (7)
Initiation not confirmed	1 (7)

Forty patients were initiated on DMPA-SC for patient self-administration. The mean age of patients was 37.2 years. All 40 patients were female. Twenty-two patients (55%) identified as Black, 17 (43%) as White, and 1 (3%) as Asian. The majority (90%) of patients were non-Hispanic. The mean baseline BMI was 30 and BMI after DMPA-SC initiation was 30.4.

Twenty-eight (70%) patients had a nursing appointment, adhering to the NFSGVHS protocol. Five patients (13%) discontinued use and switched to DMPA-IM administered by an HCP and 4 (10%) discontinued use following an ADR (hives, mood changes, bruising, and menometrorrhagia). Of the 31 patients who continued therapy, 25 (81%) were refilling appropriately (Table).

Six patients with unidentified reasons for nonadherence were contacted to determine if there were unmet contraceptive needs. This subgroup included patients with an active prescription for DMPA-SC that did not meet refill expectations. Non-adherence was mostly due to forgetfulness, however 1 patient was unable to refill her DMPA-SC in a timely manner due to an outside hospital admission and another was unreachable. These conversations were documented in the electronic health record (EHR) and all patients requesting follow-up, reinitiation of therapy, or alternative

regimens, the appropriate parties were notified to coordinate care.

DISCUSSION

The uptake in DMPA-SC prescribing suggests prescribers and patients have embraced self-administration as an option for contraception. Most patients were appropriately scheduled for nursing appointments to reinforce education and ensure appropriate self-injection technique, as outlined in the NFSGVHS procedure.

The need to improve adherence to NFSGVHS procedure was identified because not all patients had scheduled nursing appointments. This is concerning because some patients may have started self-injecting DMPA-SC without proper education, which could lead to improper injection technique and diminished effectiveness. Nursing appointments ensure appropriate self-injection techniques and reinforce the importance of refilling every 12 weeks for proper effectiveness. Nonadherence to contraceptive therapy may result in unintended pregnancy, although no pregnancies were reported by patients in this study. Pharmacist involvement in DMPA-SC initiation and follow-up monitoring may help ensure adherence to local procedure for initiation and improve patient adherence.

There is limited evidence comparing weight gain related to DMPA-SC vs DMPA-IM. However, in a small, 2-year, randomized study, weight changes were considered comparable for both cohorts with a mean increase of 3.5 kg in the DMPA-IM group vs 3.4 kg in the DMPA-SC group.⁵ While our analysis did not formally evaluate weight changes, BMI data were collected to evaluate for evidence of weight change. The duration of therapy varied per patient and may not have been long enough to see comparable weight changes.

Strengths of this project include the use of the PACT multidisciplinary approach in primary care including physicians, pharmacists, and nurses. The NFSGVHS EHR is comprehensive, and data including appointments and pharmacy refill information was readily available for collection and evaluation. Limitations included inconsistent documentation in the patient's EHR which made collection of some data difficult.

Cost Estimates

NFSGVHS had 231 patients prescribed DMPA-IM at the time of DMPA-SC rollout and 40 patients initiated DMPA-SC therapy in the first year. There are possible cost savings associated with the use of DMPA-SC compared to DMPA-IM. Although DMPA-IM costs about \$120 annually and DMPA-SC costs about \$252 annually, this does not account for indirect costs such as supplies, overhead cost, nursing visits, and patient travel.⁶ Additionally, allowing patients to self-administer the DMPA-SC injection at home provides nurses time to care for other patients.

Moving forward, the PACT and gynecology teams will receive instruction on the importance of adhering to NFSGVHS procedures to ensure new patients prescribed DMPA-SC receive education and present for nursing appointments to ensure appropriate self-injection.

DMPA has historically been administered in the clinic setting by an HCP; therefore, the prescriber was available to assess adherence to therapy based on patient's attendance to scheduled clinic appointments. Some prescribers may feel apprehensive about shifting the onus of medication adherence to the patient when prescribing DMPA-SC. However, this model is comparable to any other prescription form of birth control, such as combined hormonal contraceptive pills, where the prescriber expects the patient to take the medication as prescribed and refill their prescriptions in a timely manner to avoid gaps in therapy. The findings of this project suggest the majority of patients who were prescribed self-administered DMPA-SC for contraception were adherent to therapy. The utility of self-administration of DMPA-SC for other labeled or off-label indications was not evaluated; however, it is possible that patients who are motivated to self-administer the medication (regardless of indication) would also demonstrate similar adherence rates.

CONCLUSIONS

The majority of patients who started DMPA-SC tolerated the medication well and continued to refill therapy within the recommended time period. Patient self-administration of

DMPA-SC can enhance access by removing barriers to administration, increase patient autonomy and contraceptive continuation rates. Overall, the increase in DMPA-SC prescriptions suggests that patients and HCPs support the option for DMPA-SC self-administration at NFSGVHS.

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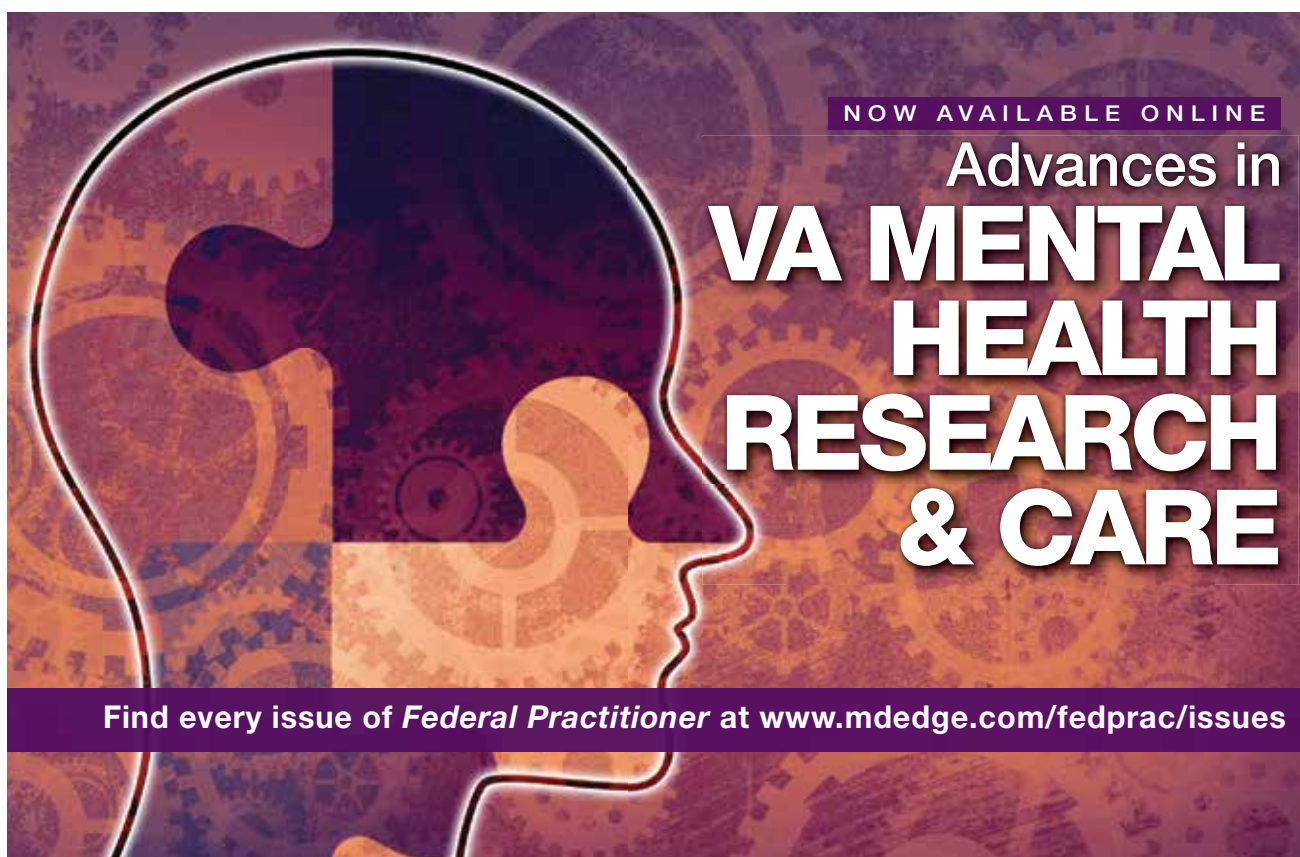
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Ethics and consent

This retrospective QA/QI project was exempt from review by the IRB of North Florida/South Georgia Veterans Health care System.

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