

Advances in Preterm Birth Prevention:
Subcutaneous vs. Intramuscular Dosing
of 17-OHPC – Pharmacokinetic Profile, Patient
and Practitioner Impact



Objectives

- Incorporate strategies for providing optimal clinical management to women at risk for PTB, based on SMFM, ACOG, and ACNM recommendations
- Define the bioavailability and bioequivalence data regarding subcutaneous administration of 17-OHPC compared with intramuscular administration
- Describe the impact of subcutaneous dosing of 17-OHPC on patient and practitioner parameters



Faculty Information

Bahaeddine M. Sibai, MD

Professor of Ob/Gyn

Director, MFM Fellowship Program

McGovern Medical School

The University of Texas Health Science Center at Houston

Department of Obstetrics, Gynecology, and Reproductive Sciences

Houston, TX

Dr. Sibai has nothing to disclose.



Society Guidelines: Progesterone to Prevent Preterm Birth

SMFM ACOG ACNM

Progenitorary and proterny birth prevention; translating obnical trials data into clinical practice

great the forming that the property from a passer, which produce it territory begins for

BROWN A SECTION OF CONTRACTOR AS A SECURITY AND A SECURITY AND ASSAULT AND ASS

MARKET THE PROPERTY AND ADDRESS THE THE PARTY AND Sphart Street and Printer Street Stre Eligin, and come to have been extracted to study of the first of and analysis of the study of th series of the Artifacts from the appropriate and the series factors. Black home of the party land party of south party, but that industrial and the Property Court of the same poster to began another posters. If you're property and a first section is Made Substant of Principle Section Significant Association Statement 1, 1992 Major Adherson on which was CAR SEASON REPORTED TO SEASON SECTION AND ADMINISTRATION OF THE PARTY.

THE RESIDENCE OF THE PARTY OF T Control And Control Control of Control And Control of Control of Control Co parties that have been been admitted to the first of the contract. Committee of the commit Section 5 Section Control Organic Print to Clark Print Control Section 1 Frank & County Sport after also profit and other bearing the conbelief between the freedy train of the proof and a sense of the order of the control of the cont Production and had been been been a found by the service trial this scientific to be a private the second of the ACCORDING TO CONTRACT OF THE PROPERTY OF THE P has it when proper color theoretic floor a best for any other

Remark II and his non-market speed and page principle. plantage for shallbally ball shallows.

The transfer of the party of th

presented of Education Co., Conference of the

William deather the second March Condition & Condition

THE PERSON NAMED IN COLUMN TWO And the second section of the strategy and the second sections. the anti-companies of the second state of

at below to the classes must probe their possible Territorial programme in the control of the second second

ter handle that private the with the last of the last two

Secret reviews his discussions. The state of the second of the state of the PA beauty and The Real Property and the Control of the Control of

ARREST ARREST

Company of the Company of the the second second second Transport and American Street, and property SHARE AND RESIDENCE AND ADDRESS OF THE PARTY OF TH printed with special days, and represent your editors where he is mad in many in the second named

The second limited with the second limited to the second limited and the second limited to the second limited limited to the second limited li DESCRIPTION OF PERSONS ASSESSED THE PERSONS NAMED IN Andread of the Laboratory Hardware from harmer of early facilities as he depot for a straining property of the party of the control producted schools from \$6000 many land when I continued



per Cownell Server by the Surger State

CONTRACTOR OF STREET AND STREET SHARE AND ADDRESS.

the little of the first property of the first

print, his course state the last of prints

total or the sales of party is been

All the companies have be before to pro-

And the state of the section and the section of the

Prediction and Prevention of Preterm Birth

Facing factor for half-or than of manufacturing in ferroms from an impossible providing and As to a supplier up to a supplier to the supplier of the supply of the supplier to the supplin the contract of the Contract Company of Contract the behind the ball of the artists of the second

Rankground

Notice to provide the beautiful and the second the best arteril behavior bloom in borders. property and the second contract of the property and the second of the priorie fellera for makes or find confidence of and in the particular of the said field in the said of that they have been about the open has be-Auto-Opening Control State Control State Control to be be a few and the beautiful that the part of the and the control of the second of the second areas of all modernmost study of . He file mass and of less authorises areas from the study of t

A freel objected on 60 tool flow or peakers. Technical tell in 1 director encycles, belowered.

man decision.

Mary and the Assessment

The second state of the se



Defeation of Printers Laborated Printers State

the hands of follows it frame better our little to allow be believing

- Reference bette put bed it him private introduct bracks or by to be. resolvent and reports. Annual residence for interference of print and large sizes.
- A 15 of transport and an appropriate probability training being private can be balado reging notatos be proved the company, and commission for the policy supply one, and empty and fortices the pur-
- Manager of reports on two local editions that is a dealer. reporting and colors of patients of participation in the later and
- Exploration the contract of the property district. disconnect arteral activation to profit converse two sames. The supply. In Colonia Proposition and Colonia particle in the Artificial States and Married School School of provide Softs.
- Depth size of entire private debug persons in all tends committees in processors for processing thinks in Security state of the Antise contact unlikely analysis is seen providing to allow regimed and provide
- Supplement Marrier in contact these part Alberts at Contract Activities. contribution in the board should a standistic related where a stell by CONTRACTOR ...
- Consisted with the SCAR position detection a behalfore of table. Schools in per la familia i propriero, retalia a diseally familia y diseas front. handle the best product and the size of place the polarities through the first production of and of Mindspore to Mistodia positions.

Andrews in the Control of the Street Artists, should be able to be delicated and the street. anthropid metalas. For shopid collection emerges to enhance these and realize them. contract. Transports and it because he seemed to your stocker and forever absence on the second that has the compression of the best first year for the mannered with terms polytopic facts have.

had any finish about the Brade Administration of Registers (In and The Control of Assessment, in a Brade of commend to include a contract the contract of the contract through the contract through the contract of the contract through the contra make previous delivery automatic days per triff entraphics, "triffel for process from the artist Factor from the CPV

many distances and the property and expected points are an experienced recognition.

M. market and a ballon bearing \$1000.



Bioequivalence

Drug demonstrates the absence of a significant difference between both the rate and the extent of which it becomes available at the site of action when administered at the same concentration or same dose in an appropriate designed study



Bioavailability

The degree at which the rate of the drug is absorbed and available at the physiological site of action, and this is often described as the total exposure or area under the curve – AUC



Pharmacokinetic Properties of 17-OHPC After a Single Dose via Subcutaneous or Intramuscular Administration

Variable	Subcutaneous Injection	Intramuscular Injection
	(n=45)	(n=45)
C _{max} (ng/mL)	7.9	6.9
t _{max} (ng/mL)	48.1	49.7
AUC 0-168 hrs (ng•h/mL)	813	790
t _{1/2} , h	212	185



Treatment-emergent Adverse Events (TEAEs)

Most Common Treatment Emergent Adverse Events	Subcutaneous Injection (n=57)	Intramuscular Injection (n=60)
	Number (%) of subjects	Number (%) of subjects
Injection site pain	22 (37.3)	5 (8.2)
Headache	9 (15.3)	10 (16.4)
Dizziness	1 (1.7)	1 (1.6)
Diarrhea	3 (5.1)	1 (1.6)
Nausea	1 (1.7)	1 (1.6)
Upper respiratory tract infections	1 (1.7)	3 (4.9)



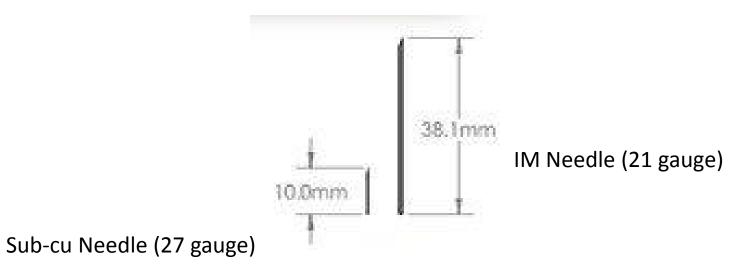
Evolution of 17-OHPC

- Approved in 2011
- Administered as 1-mL (250-mg) solution via IM injection in the upper-outer quadrant of gluteus maximus muscle using 21-gauge needle syringe
- HCPs were required to draw the drug from a vial using a large-gauge needle and then switch needles to administer the dose with a smaller-gauge needle
- February 2018, FDA-approval for a single-use autoinjector for subcutaneous dosing of 17-OHPC 1-mL (275-mg)
- Rationale for developing an autoinjector for subcutaneous administration of 17-OHPC included increased convenience and safety of administration
 - Potential reduction in dosing errors, needle sticks, injection-related pain/anxiety for the patient – without compromising its bioavailability and other PK characteristics



Auto-Injector







Auto-Injector

- Identify injection location in the back of either upper arm. Disinfect injection site and allow to air dry.
- Place device at a 90 degree angle while supporting patient's arm. Push down, listen for click, and hold device firmly against arm.
- To ensure full dose, verify window is completely orange before removing device.







17-OHPC Subcutaneous/IM Features Comparison Table

Product Feature	Subcutaneous 17-OHPC	Intramuscular 17-OHPC
Packaging	Pre-filled/single-use	Single-use vials/multi-dose vials
Location of injection	Back of arm	Buttock
Needle gauge	27 gauge/0.5" SQ	21 gauge/1.5"
Duration of injection	15 seconds	≥1 minute
Needle visibility	Hidden	Viewable
Safety shield	Yes	No