and estradiol, but retain adipose tissue. Ob mice have defective MG development. However, in striking contrast to LD mice, reconstitution of a WT fat pad in ob mice rescued the defect in MG development. Estradiol treatment did not rescue MG development in ob mice. Therefore direct interaction between mammary gland epithelia and adipocytes is a requirement for full invasion and expansion of the gland during puberty, but is not required for glandular proliferation during pregnancy and milk production.

Given that excess adipose tissue is a risk factor for breast cancer we wanted to determine if breast cancer was affected by the absence of adipose tissue. LD mice were bred to MMTV-PyMT mice that develop spontaneous breast cancer. Remarkably, LD PyMT+ mice had accelerated growth of primary tumors compared to WT PyMT+ mice. Using our MEF transplant model future studies will be directed to understanding whether the accelerated breast cancer growth is due to loss of adipokines or altered epithelial-stromal interactions.

Diabetes Mellitus and Glucose Metabolism
GESTATIONAL DIABETES, DIABETES IN PREGNANCY, AND IN UTERO EXPOSURES

Text for Success in Gestational Diabetes: Development and User Experience Testing of a Text Messaging Program

Rachel A. Blair, MD, Jennifer M. Dias, BA, Marie E. McDonnell, MD, Ellen W. Seely, MD.
Brigham and Women's Hospital, Boston, MA, USA.

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Background: Gestational diabetes mellitus (GDM) affects 5–10% of pregnancies in the United States. Poorly controlled GDM can lead to serious fetal and maternal complications. Women diagnosed with GDM are asked to form many new self-management habits. Studies have shown that text messaging is an effective, easily accessible way to improve management of diabetes outside of pregnancy, but this method has not been studied in GDM.

Objective: Obtain user feedback and iteratively incorporate it into a personalized text messaging program for women with GDM.

Methods: We performed user experience testing of a text messaging program (Txt4GDM), which was created by a multidisciplinary team based on the Health Belief Model. The program includes: 1) reminders to check blood glucoses sent 4 times per day based on self-reported mealtimes, 2) positive feedback for each blood glucose reported by a user (with an algorithm instructing users to contact their care team if too high/low), 3) one educational message and 4) one motivational message per week.

Women with GDM received simulated messages on a study smartphone. Subjects participated in semi-structured interviews about the content and phrasing of text messages. Interview replies were categorized into themes and used to iteratively optimize the program.

Results: 10 women completed user experience testing. All participants thought the program would be useful for women with newly diagnosed GDM and would use it during their first pregnancy with GDM. There were several features of the program that participants particularly liked, which were categorized into two themes: 1) customization of timing of messages and 2) messages including information not adequately covered in routine care (such as healthy snack ideas and exercise).

Several themes emerged from the semi-structured interviews that were used to optimize the program. 1) Further customization of message timing: We added the ability to enter different mealtimes for weekends and weekdays, which was well-received in subsequent iterations. 2) Minimization of jargon: Multiple women did not know what the "M" in GDM stood for, so we removed "GDM" from the messages. 3) Women wanted the messages to be more specifically related to GDM. For example, an educational message said: "Drinking water, instead of soda or juice, is healthy for you." The phrase "*and can help regulate your blood sugar*" was added based on participant feedback. Conclusions: Overall, women with GDM would use the Txt4GDM text messaging program and think it would be helpful for GDM self-management. Based on user feedback, enhanced customization of timing of text message delivery, minimization of jargon, and language specific to GDM in educational messages were added. We are testing the optimized text messaging program in an ongoing usability study.

Diabetes Mellitus and Glucose Metabolism
DIABETES COMPLICATIONS II

Diabetic Muscle Infarction (DMI) a Rare Under-Recognised Complication of Diabetes Mellitus (DM): A Series of Three Cases.

Maheswaran Dhanasekaran, MD[1], Preeti Kishore, MD[2], Ulrich K. Schubart, MD[3].
[1]Jacobi Medical Center/ Albert Einstein College of Medicine, Bronx, NY, USA, [2]Albert Einstein College of Medicine, Scarsdale, NY, USA, [3]Albert Einstein College of Medicine, New York, NY, USA.

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Background: Diabetic muscle infarction (DMI) also known as diabetic myonecrosis is an acute, rare, microangiopathic complication of long-standing poorly controlled Diabetes Mellitus (DM). DMI presents as severe pain and swelling of the affected muscle group, usually of the lower extremities. It generally occurs in patients with established vasculopathy from uncontrolled diabetes including retinopathy and nephropathy. However, a clear association of DMI to long term mortality has not yet been defined. Proposed pathophysiologic mechanisms for DMI are microvascular endothelial damage complicated by thromboembolic events triggering an inflammatory cascade, leading to local tissue ischemia and eventual infarction. Alterations in the coagulation-fibrinolysis system and vasculitis have also been invoked. About 50% of the cases have DMI recurrence in the setting of uncontrolled DM.

Clinical Case: We report 3 cases of DMI diagnosed in patients with long-standing poorly controlled DM with at least two established micro-vascular complications. The lower extremity muscle group was affected, especially the thigh muscles and paraspinal muscle in one case.