

SUMMER 2015

The rheumatology program at NewYork-Presbyterian Hospital is comprised of faculty affiliated with Weill Cornell Medical College and Hospital for Special Surgery, and Columbia University College of Physicians and Surgeons. The program provides state-of-the-art care to patients with the broad range of inflammatory and autoimmune diseases, pursues groundbreaking research at both the laboratory level and through clinical studies, and offers comprehensive training to medical residents and fellows.

Joan M. Bathon, MD Chief

Division of Rheumatology
NewYork-Presbyterian/
Columbia University
Medical Center
jmb2311@cumc.columbia.edu

Mary K. Crow, MD, MACR

Physician-in-Chief and Chair
Division of Rheumatology
Hospital for Special Surgery
crowm@hss.edu

CONTINUING MEDICAL EDUCATION

For all upcoming education events through NewYork-Presbyterian Hospital, visit www.nyp.org/pro.



Managing the Challenges of Lupus and Pregnancy

For women with systemic lupus erythematosus (SLE) and other autoimmune diseases, pregnancy can present particular challenges for both the mother and child.

“Lupus poses a risk for pregnancy complications and any woman with the disease contemplating pregnancy should consult with her rheumatologist beforehand,” advises **Lisa R. Sammaritano, MD**, a rheumatologist at Hospital for Special Surgery. Dr. Sammaritano, who receives a number of referrals for either consultation or for the care of patients with lupus

seeking to become pregnant, has particular expertise in SLE, antiphospholipid antibody syndrome, and related reproductive issues. She works closely with the Hospital’s physician-scientists who were among



Dr. Lisa R. Sammaritano

the first to study pregnancy complications and enable women with lupus to go on to have safe and healthy births. And she follows many of these women during their pregnancy in coordination with their primary rheumatologist, who resumes their care after the immediate postpartum period.

“For patients with any underlying illness, but especially in autoimmune disease, you need to plan ahead of time because there are many issues to address,” says

Dr. Sammaritano, who was co-editor of the recently published textbook *Contraception and Pregnancy in Patients with Rheumatic Disease*. “When I meet with

(continued on page 2)

Cardiovascular Consequences of Autoimmune Diseases: Current Trials

Individuals with autoimmune diseases have a significantly increased risk of developing cardiovascular-related conditions. In ongoing investigations in the Division of Rheumatology at NewYork-Presbyterian/Columbia University Medical Center, researchers are seeking to improve understanding of the underlying mechanisms, better assess cardiovascular risk in these patients, and undertake interventions that can improve patients’ clinical outcomes.

In Lupus

After completing a fellowship in rheumatology at NewYork-Presbyterian/Columbia, **Laura B. Geraldino-Pardilla, MD, MSc**, joined the faculty in 2010, overseeing the Lupus Clinic. A recipient of a Clinical and Translational Science Award in 2011 and a National Institutes of Health supplement grant

“The number one cause of death in patients with lupus who have had the disease for more than four years is cardiovascular disease. However, we currently do not have standardized guidelines for monitoring, surveillance, or identifying patients at higher risk.”

— Dr. Laura B. Geraldino-Pardilla

in 2012, Dr. Geraldino-Pardilla pursued research on the role of specific anti-citrullinated peptide antibodies in cardiovascular disease in RA using different cardiac imaging methods. In 2014, she was awarded a Rheumatology Scientist Development Award from the Rheumatology Research Foundation to study cardiovascular disease in patients with lupus.

(continued on page 3)



COLUMBIA UNIVERSITY
College of Physicians
and Surgeons



Weill Cornell Medical College

In proud collaboration with
HSS HOSPITAL FOR
SPECIAL SURGERY

Managing the Challenges of Lupus and Pregnancy *(continued from page 1)*

new patients with lupus who are of an age when pregnancy may be considered within the next several years, I bring it up early in the conversation so that they know that if they do want to become pregnant they really need to plan it with me.”

Over the past 30 years there have been many studies looking at the risks of pregnancy and, more importantly, how to define the risk for a given individual. “I use what I know about lupus pregnancy risk – whether it’s risk of a flare, risk to the outcome of the pregnancy, or another issue – and counsel the patient in terms of her individual situation and medical history,” explains Dr. Sammaritano. “Just as lupus is puzzling and unpredictable, it’s also incredibly heterogeneous. We may have lupus patients with a mild rash and occasional joint pain at one end of the spectrum. At the other end is the patient who is extremely ill and has been in the ICU. Such patients are going to have very different outlooks when it comes to considering pregnancy.”

Focusing on Multiple Factors

According to Dr. Sammaritano, the challenge is assessing how risky a pregnancy might be for a given patient, taking into account the nature of the diagnosis, how active the disease is, and a number of other factors. “When we talk about planning a pregnancy, I have a protocol that involves evaluating the patient in terms of her disease activity and disease damage,” she says.

“If a patient has active lupus, that is a bad time to consider pregnancy,” notes Dr. Sammaritano. “We encourage patients to have six months of quiet disease on medications felt to be safe for use in pregnancy and then we will look at various laboratory values, including antiphospholipid antibodies, which might increase the risk

for having a bad pregnancy outcome such as pregnancy loss with a miscarriage or a stillbirth, severe preeclampsia, or early delivery with a small or premature baby. Other important laboratory tests include the anti-Ro/SSA and La/SSB or Sjögren’s A and B antibodies. These antibodies can actually cross the placenta to cause congenital heart block in the fetus, a rare but very serious condition with 20 percent mortality. Most of the surviving children require pacemakers because of damage to the very sensitive conduction tissue from the inflammation that these antibodies cause.”

“Since these diseases so often involve many different organ systems, rheumatologists need to have the broad view and coordinate and consult closely with all disciplines involved in the care of the mother and the fetus.”

— Dr. Lisa R. Sammaritano

Patients who are advised to wait to become pregnant until their lupus is quiet may go on to develop age-related fertility issues. Frequently, patients are referred to Dr. Sammaritano for a second opinion about fertility therapy. “Some rheumatologists may not feel that they have enough knowledge of pregnancy issues to do effective counseling,” she says. “However, it really is a very important part of care when a lupus patient is considering pregnancy or a fertility-related procedure. I spend a lot of time educating patients and their partners, explaining the potential risks to the mother and developing fetus. I feel comfortable doing that; some rheumatologists may not.”

(continued on page 4)

ACR Examines Medications in Pregnancy and Lactation

In January 2014, Dr. Lisa Sammaritano took part in the American College of Rheumatology’s Reproductive Health Summit examining the management of fertility, pregnancy, and lactation in women with autoimmune and systemic inflammatory diseases. She joined some 30 representatives from the Food and Drug Administration, National Institutes of Health, National Institute of Child Health and Human Development, experts in obstetrics, maternal and fetal medicine, pediatrics, rheumatology, gastroenterology, and dermatology, as well as patient support and advocacy groups. “The point of the meeting was to try to better understand the impact of our drugs on pregnancy and what we can do to improve the information that is available and should be available to patients,” says Dr. Sammaritano. “Most of our drugs fall into a very gray area as far as safety and pregnancy. Patients have not historically been included in studies when they’re pregnant or might become pregnant. So it means that we end up relying on animal models for much of the information or case reports about adverse outcomes after the patient was inadvertently exposed. This committee was charged with developing guidelines that are better than what’s available right now and also encouraging the FDA and pharmaceutical companies to include more pregnant patients in trials in a way that is safe for the mother and the fetus.

“For example, tumor necrosis factor [TNF] inhibitors are really the mainstays of therapy for rheumatoid arthritis now,” says

Dr. Sammaritano. “Many women are faced with the issue of stopping their TNF inhibitor because there are few data on safety and pregnancy. There are now some clinical studies that are very reassuring in terms of the outcome of those pregnancies. I think that more and more women will be continued on TNF inhibitors through pregnancy.

“It takes a lot of information because there are so many ethical and legal issues involved,” she adds. “The hope is that we can bring together the right people to move forward with better recommendations so that women don’t have to choose between having a baby and having their disease controlled. I think we’ve come a long way but we’d like it to be even better so that for those few women who do have bad outcomes now, we can change that and make the possibility of having a child real for them, too.”

Reference Article

Kavanaugh A, Cush JJ, Ahmed MS, Bermas BL, Chakravarty E, Chambers C, Clowse M, Curtis JR, Dao K, Hankins GD, Koren G, Kim SC, Lapteva L, Mahadevan U, Moore T, Nolan M, Ren Z, Sammaritano LR, Seymour S, Weisman MH. Proceedings from the ACR Reproductive Health Summit: The management of fertility, pregnancy and lactation in women with autoimmune and systemic inflammatory diseases. *Arthritis Care & Research* (Hoboken). 2015 Mar;67(3):313-25.

Cardiovascular Consequences of Autoimmune Diseases: Current Trials (continued from page 1)

“The number one cause of death in patients with lupus who have had the disease for more than four years is cardiovascular disease,” says Dr. Geraldino-Pardilla. “However, we currently do not have standardized guidelines for monitoring, surveillance, or identifying patients at higher risk. Lupus predominantly affects young women, and those less than 45 years of age have a two to three times higher relative risk of developing a heart attack and heart failure. While arrhythmias are an important contributor to cardiovascular mortality in the general population, to date it has not been thoroughly studied in adults with lupus.”

Dr. Geraldino-Pardilla is about to embark on a pilot study at NewYork-Presbyterian/Columbia that will emphasize imaging studies to identify factors contributing to heart conduction abnormalities and early cardiovascular disease in patients with lupus.

“We will be specifically studying the association of cardiac conduction defects with the presence of myocarditis and/or endothelial dysfunction in adults with lupus stratified by anti-Ro antibody status,” she says. “There is extensive data that demonstrate heart conduction abnormalities in the fetus of patients with lupus with the anti-Ro antibody. However, the repercussions of this antibody in the hearts of adults with lupus are not clear.”

According to Dr. Geraldino-Pardilla, in the last decade, studies have shown that adults with lupus who have the anti-Ro antibody also have some heart conduction defects. “But this hasn’t been fully explored,” she says. “Our study will employ state-of-the-art imaging looking for inflammation of the heart, myocarditis, and microvascular dysfunction to help determine the cause of cardiac conduction abnormalities in these patients.”

Current practice dictates that if patients with lupus have some symptom of chest pain or shortness of breath then they would undergo a cardiovascular workup. “But what we know is that the most common cardiac presentation that patients have is pericarditis, which rarely translates into mortality,” says Dr. Geraldino-Pardilla. “A reason why patients with lupus die of heart attacks and congestive heart failure might be because we are not routinely assessing for other cardiac issues. We know from autopsies that inflammation in the myocardium of lupus patients is not rare. Furthermore patients who have the anti-Ro antibody are known to have prolonged QTc intervals that could lead to ventricular arrhythmia and sudden death. But we don’t routinely look for these EKG abnormalities, for the presence of myocardial inflammation, or coronary microvascular function. We know mainly from Doppler studies that patients with lupus have accelerated atherosclerosis, but these are routinely performed in the carotid arteries, which doesn’t necessarily translate to what’s happening in the coronary arteries.”

Dr. Geraldino-Pardilla will soon begin enrolling 50 patients in the study, half with the anti-Ro antibody with high titers and half that are anti-Ro antibody negative. “We will stratify patients with the antibody to see if they are at higher risk for heart disease,” she says.



Dr. Laura B. Geraldino-Pardilla

Patients will undergo a cardiac PET scan to distinguish whether fibrosis or active myocardial inflammation is present. “If a cardiac MRI or an echo shows certain abnormalities, we cannot always be sure if it is old or active inflammation,” says Dr. Geraldino-Pardilla. “If we can identify myocarditis and treat it with immunosuppressive therapy, we could potentially prevent fatal cardiovascular outcomes in these young patients.”

In Rheumatoid Arthritis

Under the leadership of Joan M. Bathon, MD, Chief of Rheumatology at NewYork-Presbyterian/Columbia, researchers are investigating myocardial function in patients with rheumatoid arthritis under the aegis of the ongoing study – RHYTHM (RHeumatoid Arthritis study of THe Myocardium, formerly ESCAPE II Myocardium): How RA and

TNF Inhibitors Affect Myocardial Structure and Function – funded by the National Institute of Arthritis and Musculoskeletal and Skin Diseases.

Data on a small number of patients with rheumatoid arthritis show that they may have a smaller heart size and altered heart function. There is limited evidence that general inflammation due to RA and inflammation within the heart may lead to a smaller heart size, which may precede heart failure in patients with RA. Preliminary data show that this may improve with treatment with a specific class of tumor necrosis factor (TNF) inhibitors. The investigators hypothesize that RA affects the size and function of the heart via inflammation and that treatment with TNF inhibitors may improve this and possibly prevent the development of heart failure in RA.

To investigate these hypotheses, Columbia researchers are identifying 25 patients with joint inflammation who have not responded to treatment despite being on non-biologic DMARD mono therapy or combined DMARD therapy. Patients will be prescribed a TNF inhibitor in addition to their current treatment and will be evaluated at baseline and at six months with an echocardiogram and PET scan of their heart.

Historical Reference Articles

Bjornadal L, Yin L, Ekborn A, et al. Cardiovascular disease: a hazard despite improved prognosis in patients with SLE: results from a Swedish population based study. 1964-95. *The Journal of Rheumatology*. 2004;314:713-19.

Lazzerini PE, Capecchi PL, Guideri F et al. Comparison of frequency of complex ventricular arrhythmias in patients with positive versus negative anti-Ro/SSA and connective tissue disease. *American Journal of Cardiology*. 2007;100:1029-34.

Logar D, Kveder T, Dobovisek J, et al. Possible association between anti-Ro antibodies and myocarditis or cardiac conduction defects in adults with systemic lupus erythematosus. *Annals of the Rheumatic Diseases*. 1990 Aug;49(8):627-29.

For More Information

Dr. Joan M. Bathon • jmb2311@cumc.columbia.edu

Dr. Laura B. Geraldino-Pardilla • lbg2124@cumc.columbia.edu

Advances in Rheumatology

NewYork-Presbyterian Hospital
525 East 68th Street
New York, NY 10065

www.nyp.org

NON-PROFIT ORG.
US POSTAGE
PAID
STATEN ISLAND, NY
PERMIT NO.169

Managing the Challenges of Lupus and Pregnancy (continued from page 2)

“Then there are some patients who have had such severe disease that they are left with damage that is a contraindication for them to become pregnant,” continues Dr. Sammaritano. “They may have severe renal inflammation and insufficiency, significant cardiac or valvular disease, or pulmonary hypertension and severe lung disease. With those few patients, they need to understand that becoming pregnant is not an option because they will likely do very poorly and the outcome of the pregnancy will not be good. Fortunately most of our patients are not in that circumstance.”

Medication is another important consideration. Some medications can have adverse effects during pregnancy and will need to be discontinued up to three months before the patient becomes pregnant. If the patient cannot manage without medication, a medication that is safe for pregnancy will be advised. “Azathioprine, for example, is the most commonly used immunosuppressive for these patients,” says Dr. Sammaritano. “If this does not work, we will have to try a medication that might not be first or second line.” For several patients, Dr. Sammaritano and her colleague, **Kyriakos Kirou, MD**, have prescribed tacrolimus, a third-line alternative, in the absence of other medications that were safe or successfully managed the lupus. The patients all had successful pregnancies.

Dr. Sammaritano emphasizes the importance of a team approach in managing a pregnancy. “Since these diseases so often involve many different organ systems, rheumatologists need to have the

broad view and coordinate and consult closely with all disciplines involved in the care of the mother and the fetus: the obstetrician who is focused on the baby; the nephrologist whose attention is on the kidney; the hematologist who monitors blood levels,” she says. “If you do the planning properly – even when it’s lengthy – based on our experience and clinical studies, you can often achieve a successful pregnancy outcome.

“Our goal is to try to predict potential issues as best we can, both in terms of monitoring and managing health risks and also in managing the patient’s expectations. You want those patients who you think may have a tough time to be aware and prepared,” she adds. “Of course there are patients who don’t have these risk factors, have mild or quiet disease, and have an uneventful pregnancy. You would never know that they had lupus.”

Reference Articles

Sammaritano LR. Contraception in patients with systemic lupus erythematosus and antiphospholipid syndrome. *Lupus*. 2014 Oct;23(12):1242-45.
Sammaritano LR. Pregnancy in rheumatic disease patients. *Journal of Clinical Rheumatology*. 2013 Aug;19(5):259-66.

For More Information

Dr. Lisa R. Sammaritano • sammaritanol@hss.edu