Innovations in Pulmonology

Rady Children's Hospital San Diego

Rady Children's - A comprehensive system focused solely on children.

PEOPLE

Drs. Annabelle Quizon and Eulalia Cheng join team

Annabelle Quizon, M.D., recently joined the Division of Respiratory Medicine at Rady Children's Hospital-San Diego and is also an associate professor of pediatrics at UC San Diego School of Medicine. She will work to establish a multidisciplinary Aero-Digestive Clinic.

The clinic will be a collaborative effort with Hayat Mousa, M.D., from the Division of Gastroenterology, Hepatology & Nutrition, and Matthew Brigger, M.D., M.P.H., from the Division of Otolaryngology. It will offer comprehensive diagnostic and management services for patients with combined or interrelated airway and gastrointestinal problems.

Dr. Quizon currently sees patients with a wide spectrum of respiratory diseases, both congenital and acquired. Her clinical and research interests include difficult-to-control asthma, wheezing disorders, cystic fibrosis and pulmonary function testing. She is also interested in quality improvement initiatives to improve clinical outcomes, patient and staff satisfaction, and efficient use of resources. Additionally, she is a member of the core group of faculty trainers implementing patient-centered communication in healthcare.

Dr. Quizon completed her pediatric residency and pediatric pulmonology fellowship at Harvard Medical School-Children's Hospital Boston. She was chief of pediatric pulmonology at Baystate Medical Center in Springfield, Mass., from 2003 to 2007 before moving to the University of Miami, where she became clinical director and co-director of the fellowship program of the Division of Respiratory Diseases as well as director of the Cystic Fibrosis Program. She came back to Massachusetts and resumed her previous position at Baystate Medical Center in 2013 and then joined Rady Children's in July 2016.

Eulalia R.Y. Cheng, M.D., a staff physician in the Division of Respiratory Medicine at Rady Children's and UC San Diego School of Medicine, sees patients on the main Hospital campus and is providing consultation services at Rady Children's satellite clinics in Encinitas and Oceanside. She will also teach medical students, residents and fellows who rotate in pediatric pulmonology.

Dr. Cheng is experienced in the broad scope of pediatric pulmonology, including apnea, asthma, bronchopulmonary dysplasia, other causes of chronic lung disease in children, cystic fibrosis, interstitial lung disease, muscle weakness with associated respiratory diseases, pneumonia, evaluation of sleep-disordered breathing and management of technology-dependent children.

After graduating from medical school and completing an internship at the University of the Philippines College of Medicine, Dr. Cheng came to the United States to pursue further medical training. She completed her pediatric residency at the University of Rochester Medical Center in New York and her pediatric pulmonology fellowship at the University of Colorado Health Sciences Center in Denver and the University of Rochester Medical Center. She then practiced pediatric pulmonology as a member of the clinical faculty of the University of Rochester School of Medicine and Dentistry, most recently serving as a clinical associate professor of pediatrics.

While in Rochester, she directed the pediatric pulmonology fellowship training program; four fellows graduated under her leadership and are currently practicing in the specialty. She was also the director of the Synagis program, coordinating the review and approval of eligible premature and other high-risk infants for palivizumab as prophylaxis for respiratory syncytial virus.

PROGRAMS

Severe Asthma Clinic takes multidisciplinary approach

The Severe Asthma Clinic uses a multidisciplinary approach to treat children with severe asthma. The team consists of pediatric pulmonologist Mateja Cernelc-Kohan, M.D., two pediatric allergists/immunologists, Bob Geng, M.D., and Sydney Leibel, M.D., a pharmacist, a respiratory therapist, a registered nurse and a social worker.

About 5 percent of pediatric asthma is categorized as severe. Children with severe asthma have daily symptoms of cough, wheeze or shortness of breath despite asthma medication use. These patients use the emergency room frequently and require hospitalizations, including pediatric intensive care unit admissions with asthma flares. Additionally, they require high doses or frequent systemic steroid bursts to control acute asthma exacerbations.

Symptoms are difficult to treat when the diagnosis of asthma is incorrect or when asthma coexists with other medical conditions. The child's asthma may be severe due to poor adherence or improper use of inhaled steroids. Severe, therapy-resistant asthma is relatively rare.

The clnic's team first focuses on confirming an asthma diagnosis. The specialists have experience in recognizing and treating coexisting conditions as well as conditions that may mimic asthma, such as allergies/rhinitis, sinusitis, gastro-esophageal reflux, obesity/obstructive sleep apnea, vocal cord dysfunction, anxiety and hyperventilation. Other less common conditions, such as bronchiolitis obliterans, bronchiectasis/allergic bronchopulmonary aspergillosis, primary ciliary dyskinesia and immunodeficiencies, are considered as well.

A comprehensive evaluation is performed that includes pulmonary function testing with spirometry, measurement of exhaled nitric oxide (FENO) and in certain cases, body plethysmography. Allergy skin/blood testing is performed to help with identifying asthma triggers. In selective cases, high-resolution chest CT is ordered to evaluate for bronchiolitis obliterans and bronchiectasis, and bronchoscopy with bronchoalveolar lavage is performed to evaluate for airway abnormalities and assess the type of airway inflammation.

Working with the social worker, the team identifies barriers to care and provides asthma education to help families understand the importance of regular inhaled steroid use.

Rady Children's Hospital San Diego

innovation belongs in every moment

INNOVATIONS

Study to assess microbiome of cystic fibrosis, chronic airway disease patients

Meerana Lim, M.D., director of the Rady Children's/UC San Diego Cystic Fibrosis Center and a professor of pediatrics at UC San Diego School of Medicine, in collaboration with Rob Knight, Ph.D., a professor of pediatrics and of computer science & engineering at UC San Diego and world leader in the study of the microbiome, has embarked on a research project to better understand the microbiome of the respiratory tract, gastrointestinal tract and skin of pediatric patients with cystic fibrosis and chronic airways disease.

The study will assess the microbiome of these patients over time to see how patterns change and if particular patterns emerge that show acute exacerbations or that correlate with disease progression or stability. Samples will be collected from the oropharynx, sputum, skin and stool at each clinic visit and daily during hospitalizations. The results could lead to more targeted therapies to treat infections and ultimately, longer and healthier lives.

The team also develops strategies to encourage compliance and teaches self-management skills, such as trigger and tobacco avoidance, recognition of early warning signs of acute asthma exacerbations and dealing with school issues. An asthma action plan is then created for the patient and his/her school nurse.

Treatment is focused on providing optimal pharmacotherapy to improve control and prevent acute exacerbations with minimal or no adverse effects, and preventing reduced lung growth. Patients who are candidates for therapy with biologics, such as monoclonal antibody against IgE - omalizumab injections (Xolair) and anti-IL5 monoclonal antibody (mepolizumab), are identified and therapy is initiated. There are several clinical studies currently underway that are available and will be offered to patients who are interested and meet appropriate criteria.

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The Knight lab employs techniques that are culture-independent, which allow the detection of species that are present in low numbers that would not be detected by typical culture methods. This allows for estimation of microbial diversity (number of species present as well as relative abundance), which is now thought to be a critical factor in disease exacerbation and progression.

In patients with cystic fibrosis and chronic airways disease, infections can not only cause immediate symptoms that require interventions and possibly hospitalizations, but can also, over time, cause disease progression and even mortality from end-stage lung disease. Until recently, the knowledge of which organisms are responsible for symptoms and disease progression has been largely rudimentary. Now, it is known that there is a large, diverse community of organisms in the lungs and elsewhere in the body, which is important in understanding why exacerbations happen and perhaps how they should be treated.

It is likely that a complex interaction of many organisms, rather than a single organism, is responsible for pulmonary decline. These microbial communities change throughout an individual's life and are affected by many things, including antibiotic therapy.