

*Progress would not be possible without research. Valley Children's currently participates in more than 166 studies to help advance pediatric medicine. This section underscores a few of them.*

# Uncovering the Mysteries of Valley Fever

Central California is a hotspot for coccidioides, an insidious fungus that lives in the soil and releases microscopic spores into the air. Most people show no sign of inhaling these fungal spores. Others suffer the life-limiting symptoms of Valley fever. Almost 1,000 children stricken with Valley fever visit Valley Children's each year.

Dr. Fouzia Naeem, an infectious diseases specialist at Valley Children's, is leading various research efforts to investigate the effects of Valley fever on children, who may be at greater risk and who could be more susceptible to advanced symptoms.

## Psychosocial implications of Valley fever

Through collaboration with UC Merced, this study intends to increase understanding of psychosocial issues faced by families of children with symptomatic Valley fever. Dr. Naeem's initial study<sup>1</sup> documented the psychological functioning, quality of life and illness perceptions of Valley fever patients and their families. Dr. Naeem is using the results to develop resources to help families cope with Valley fever, including a resource handbook, support groups, mentoring programs and an annual Valley fever family day.

## Immune system and cytokines study

Also in collaboration with UC Merced, Dr. Naeem and her team gathered information from 50 individuals segmented into three categories:

- Children with Valley fever admitted to the hospital

- Children with Valley fever treated as outpatients
- Siblings of patients with Valley fever unaffected by the disease

The research team is analyzing differences among the three categories in the research participants' immune systems and cytokines (substances released from immune cells). The study also seeks to determine if genetics are a factor and why some individuals are more affected than others.

## Review of disseminated Valley fever disease

Dr. Naeem gathered data of 80 patients from the past 10 years who suffered aggressive symptoms of Valley fever. For these children, the disease had spread beyond the lungs to other parts of the body, such as the spine, brain, lymph glands, bones and joints. Dr. Naeem looked at age, gender, ethnicity, clinical presentation and disease location. She also examined laboratory/radiographic data (e.g., coccidioides complement fixation titers (CF), a common test for coccidioides antibodies in the blood utilized for disease monitoring). She identified older age groups, non-Hispanics and higher CF titers as potential risk factors for disseminated disease, which would require careful investigation and aggressive intervention.

Through Dr. Naeem's studies, we are learning more about how to identify the predictors of this disease and treat our patients effectively as early as possible.

<sup>1</sup>Healthcare 2015, 3, 775-795



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