RSNA®
Radiological Society of North America

820 Jorie Blvd
Oak Brook, IL 60523
TEL 1-630-571-2670
FAX 1-630-571-7837
RSNA.org

NEWS

RSNA Press Release

Chest X-rays Can Help Predict Which H1N1 Patients Are at Greatest Risk

Released: March 23, 2010

Media Contacts:

RSNA Media Relations: 1-630-590-7762

Linda Brooks
1-630-590-7738
lbrooks@rsna.org

Maureen Morley
1-630-590-7754
mmorley@rsna.org

At A Glance

- Chest x-rays may help radiologists identify high-risk H1N1 patients who require intense monitoring.
- Abnormal findings in the outer areas of both lungs and in multiple sections of the lungs were associated with more serious outcomes.
- Approximately 13 percent of patients with abnormal chest x-ray findings experienced adverse outcomes, compared to 3 percent of patients with normal chest x-rays.

OAK BROOK, Ill. — A new study published in the April issue of *Radiology* suggests that chest x-rays may play an important role in the diagnosis and treatment of H1N1 influenza by predicting which patients are likely to become sicker.

"Working in the emergency room is very stressful and physicians need information fast," said lead author Galit Aviram, M.D., head of cardiothoracic imaging in the Department of Radiology at Tel Aviv Sourasky Medical Center in Tel Aviv, Israel. "Our study provides significant findings that will help clinicians triage patients presenting with clinically suspected H1N1 influenza."

According to the Centers for Disease Control and Prevention (CDC), the H1N1 virus is the predominant influenza virus in circulation during the 2009-2010 flu season. The CDC estimates that between April 2009 and January 2010 there have been approximately 57 million cases of H1N1 in the U.S., resulting in 257,300 hospitalizations and 11,686 deaths.

As in past pandemics, the virus can occur in waves. It is possible that the U.S. could experience additional waves of the virus throughout 2010.

In the study, Dr. Aviram's research team analyzed the chest x-rays of 97 consecutive patients with flu-like symptoms and laboratory-confirmed diagnosis of H1N1, admitted to the emergency department of Tel Aviv Sourasky Medical Center between May and September 2009. The researchers then correlated the x-ray findings with adverse patient outcomes.

"To our knowledge, this is the largest series describing the presentation of chest x-ray findings in patients diagnosed with H1N1 influenza," Dr. Aviram said.

The chest x-rays revealed abnormal findings for 39 of the patients, five (12.8 percent) of whom experienced adverse outcomes, including death or the need for mechanical ventilation. For the other 58 patients, chest x-ray findings were normal, although two (3.4 percent) of the patients experienced adverse outcomes. The mean age of patients in the study, which included 53 men and 44 women, was 40.4 years.

"Abnormal findings in the periphery of both lungs and in multiple zones of the lungs were associated with poor clinical outcomes," Dr. Aviram said.

Although a normal chest x-ray did not exclude the possibility of an adverse outcome, Dr. Aviram said the study's findings can help physicians better identify high-risk H1N1 patients who require close monitoring.

"In H1N1, as in various types of community-acquired pneumonia, initial chest x-rays may not show abnormalities that develop later in the course of the disease," Dr. Aviram explained. "Further x-rays should be performed according to the patient's clinical course."

# # #

"H1N1 Influenza: Initial Chest Radiographic Findings in Helping Predict Patient Outcome." Collaborating with Dr. Aviram were Amir Bar-Shai, M.D., Jacob Sosna, M.D., Ori Rogowski, M.D., Galia Rosen, M.D., Iuliana Weinstein, M.D., Arie Steinvil, M.D., and Ofer Zimmerman, M.D.

Radiology is edited by Herbert Y. Kressel, M.D., Harvard Medical School, Boston, Mass., and owned and published by the Radiological Society of North America, Inc. (*http://radiology.rsna.org/*)

RSNA is an association of more than 44,000 radiologists, radiation oncologists, medical physicists and related scientists committed to excellence in patient care through education and research. The Society is based in Oak Brook, Ill. (*RSNA.org*)

For patient-friendly information on chest x-rays, visit *RadiologyInfo.org*.