Program to Begin Shortly

New Banner Clinical Practice for Ambulatory Management of Valley Fever

Implementation Begins Now
September 20, 2018
12:15-12:45 PM

David Valenzuela MD & John Galgiani MD
Banner University Valley Fever Program
New Banner Clinical Practice for Ambulatory Management of Valley Fever

Implementation Begins Now

David Valenzuela MD & John Galgiani MD
Banner University Valley Fever Program
What Is Valley Fever?

- Caused by soil fungi
  - *Coccidioides immitis*
  - *Coccidioides posadasii*

- Other names:
  - Coccidioidomycosis
  - “COCCI”

- Inhalation of one spore causes infection

- Spectrum of disease
  - Sub-Clinical: 60%
  - Self-Limited: 30%
  - Complicated: 10%

- After infection, most persons develop life-long immunity to a second infection
The Valley Fever Corridor: 2/3 of all US disease occur here
Common “Mild” Self-Limited Valley Fever

Signs and Symptoms, < 1 months from exposure:
- Cough, chest pain, fever, weight loss
- Fatigue
- Bone and joint pains (a.k.a. Desert Rheumatism)
- Skin rashes (painful or intense itching)

Course of illness:
- Weeks to months
- 25% of college students are sick for > 4 months
- 50% of workers lose > 2 weeks
Coccidioidomycosis as Community-Acquired Pneumonia (CAP)

In Phoenix and Tucson
25 – 30% of all CAP Is Valley Fever
22nd Anniversary of the UA VFCE

• Education
  – 2002 Valley Fever (FV) Awareness Program

STATE OF ARIZONA
PROCLAMATION

WHEREAS, Valley Fever is a condition in Arizona that greatly increases its threat to the health and well-being of the state's residents; and
WHEREAS, the Valley Fever Center for Excellence at the University of Arizona is working to educate and inform the public about Valley Fever; and
WHEREAS, it is the policy of the State of Arizona to actively inform its citizens about health issues; and
WHEREAS, Valley Fever is a disease that affects people of all ages and demographics; and
WHEREAS, Valley Fever is preventable through education and awareness.

NOW, THEREFORE, I, Doug D. Ducey, Governor of the State of Arizona, do hereby proclaim November 10th - 18th, 2018 as Valley Fever Awareness Week.

16th Annual Valley Fever Awareness Week
November 10th – 18th 2018
22nd Anniversary of the UA VFCE

- Education
  - 2002 Valley Fever (FV) Awareness Program
  - 2016 Primary Care Tutorial, 2nd Edition
22nd Anniversary of the UA VFCE

• Education
  – 2002 Valley Fever (FV) Awareness Program
  – 2016 Primary Care Tutorial, 2nd Edition
  – CME Programs: Live and Online
22\textsuperscript{nd} Anniversary of the UA VFCE

- **Education**
  - 2002 Valley Fever (FV) Awareness Program
  - 2016 Primary Care Tutorial, 2\textsuperscript{nd} Edition
  - CME Programs: Live and Online
    - New VFCE website, ATS, CDC

- **Research**
  - $25-35 million in funding: Epi., Immunol., Genetics, Diagnostics, Drugs, Vaccines
22nd Anniversary of the UA VFCE

• **Education**
  – 2002 Valley Fever (FV) Awareness Program
  – 2016 Primary Care Tutorial, 2nd Edition
  – CME Programs: Live and Online
    • New VFCE website, ATS, CDC

• **Research**
  – $25-35 million in funding: Epi., Immunol., Genetics, Diagnostics, Drugs, Vaccines

• **Clinical Care (?)**
How bad is it?

Arizona CAP
  - ~ 25% - 30% due to Coccidioides
    BUT
  - < 15% are tested for Coccidioides

~ 1,000 new AZ medical licenses/year
  - 12% received MD in AZ
  - 40% no AZ GME

80% didn’t know:
  - VF is reportable
  - Vaccine does not exist

40% of clinicians are not confident to treat VF
45% of Diagnoses Delayed > 1 month
Delay of Valley Fever Diagnosis: BUMC-T

30% of Diagnoses Delayed > 1 month
What Do Weeks of Delayed Diagnosis Mean?

- Unnecessary anti-bacterial drug use
- Protracted patient anxiety and fear
- Over-utilization CT scans and bronchoscopies, even thoracotomies

**Hypothesis:** Earlier diagnosis would improve outcomes and reduce cost
Primary Care of Coccidioidomycosis

- Consider the diagnosis
- Order the right tests
- Check for risk factors
- Check for complications
- Initiate management
Consider the diagnosis in Arizona

- In Arizona, Valley Fever is very common. It should be in the differential often.
- More frequent between the monsoons and the winter rains.
- Syndromes: **Always** in community acquired pneumonia, rheumatism, rashes.
Enzyme Immunoassay (EIA) test

- **A positive test** is very specific and usually is diagnostic.

- **A negative test** never rules out Valley Fever. Repeated testing improves diagnostic sensitivity.
Check Risk Factors for

Pulmonary Complications
- Diabetes mellitus
- Cardio-pulmonary or other co-morbidities (Evidence: “common sense”).

Disseminated Infection
- Cell immunodificiency
- Males > Females
- Racial background
  - African or Filipino
- Adults > Children
- Pregnancy
• Most complications are focal
• A review of systems and physical examination will usually detect or exclude the possibility of complications.
• If new focal findings are present, further imaging and laboratory studies can determine if they are related to infection.
Primary Care of Coccidioidomycosis

- Consider the diagnosis
- Order Cocci Serologies
- Check for Risk Factors
- Check for complications
- Initiate management
- Repeated evaluations
- Referral
- Retest

Specialty Referral
Initiate Management for Low Risk - Simple Early Infection

- Follow-up office visits
- Serial body weights
- Check for new symptoms or signs
- Repeat coccidioidal antibody testing
- Repeat Chest PA and Lateral X-rays
- Most patients do not need therapy
Recognition, Evaluation and Management of Coccidioidomycosis (Valley Fever)

Just Remember C-O-C-C-I

**RECOGNITION**

1. Consider the diagnosis
   - Respiratory: Previous visit, needs X-ray or antibacterial Rx?
   - Musc/Skel: More than one week, associated with fever or fatigue.
   - Rashes: E. nodosum or E. multiforme

2. Order the right tests
   - EIA screen for coccidioidal antibodies with reflex to immunodiffusion and quantitative CF.

3. Order EIA screen for coccidioidal antibodies
   - Valley Fever Process Completed
   - EIA screen Positive?
     - Valley Fever Process Completed
     - Illness resolved in 3 weeks

4. EVALUATION
   - Check for Risk Factors
     - Immunosuppression (HIV, organ recipient, Rheum/GI/Derm response modifier Rx, renal failure)
     - Diabetes, major cardiac or pulmonary comorbidities, pregnancy
   - Check for complications evident by PE exam or imaging
     - Focal ulceration or inflammation of skin/soft tissue
     - Asymmetric skeletal pain, joint effusions
     - Progressive or unusual headache

5. MANAGEMENT
   - Initiate Management, Uncomplicated VF
   - Diagnosis f/u Visit #1
   - Review of Syst
   - Phys. Exam
   - Risk factor Complications?
     - No: Schedule follow-up visit #2 in 2-3 months
     - Yes: Refer to Specialist (ID or Pulmonary)
   - Repeat PA and/or Chest X-ray (if previous was abnormal)
   - Repeat coccidioidal antibody test, sed rate and/or CRP
   - Valley Fever or creative problem
The Valley Fever Tool Kit

**Training Resources**
- Process flow pocket guide
- CME presentations at individual clinical practices.
- Powerpoint training presentation online
- Primary Care Tutorial

**Support Resources**
- Wall posters and patient educational brochures
- Nurse Navigator referral support? (proposed)
- EMR alerts? (only if wanted by the clinicians)
Metrics to Track Implementation

# of EIA serologies ordered
% of EIA tests that are positive
# of new ICD10 diagnoses of Valley Fever
# of antibacterial Rx are written before Valley Fever diagnosis
% of new Valley Fever patients are referred for Infectious Diseases or Pulmonary consultation
• Banner Health and the UA Valley Fever Center for Excellence are changing the way Arizona clinicians recognize and manages patients with Valley Fever.

• Central to this change will be the expanded roll of primary care clinicians in earlier diagnosis and management of uncomplicated VF.
New Banner Clinical Practice for Ambulatory Management of Valley Fever

Thank-You

For more information: https://vfce.arizona.edu/education/banner-valley-fever-clinical-practice-toolbox