



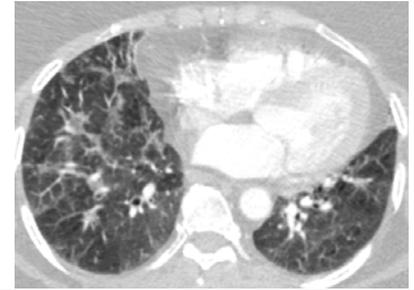
Hospitalist Sub-I: Evidence-Based Medicine Project

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CASE SIGNOUT

52yo obese Dominican woman with mod-sev asthma, DM2, HTN presenting with SOB, pleuritic chest pain, and tachycardia. Pt admitted in January for atypical pneumonia treated with Abx. Was in usoh 6d prior to admission, when she progressively lost her voice and became short of breath on minimal exertion. Admission exam notable for bilateral basilar rales. CXR on admission showed pulmonary venous congestion and probable small left pleural effusion and CT showed atypical distribution of now mild pulmonary edema, though TTE and BNP negative. MI, PE, and PTX r/o. Pulmonary consult elicited a h/o parrot in home and suspects hypersensitivity pneumonitis, recommends sending off HP panel.



CLINICAL QUESTION

What clinical features help make the diagnosis of hypersensitivity pneumonitis?

SEARCH

Database: Ovid

Search terms:

hypersensitivity pneumonitis

+ diagnosis

+ clinical

+ (limited to full text, English, and human subjects)

53 articles skimmed for further relevance

ARTICLE

Lacasse Y, Selman M, Costabel U, et al. Clinical Diagnosis of Hypersensitivity Pneumonitis. Am J Respir Crit Care Med. 2003;168:952-8

STUDY DESIGN

Two Prospective Cohorts – one for development of a prediction rule, one for validation

Group	Criteria or definition	n
Population screened	>18y at seven clinical sites (Mexico, Germany, Canada, France, Japan, Spain, Finland)	400
Inclusion criteria	Pulmonary syndrome with HP on differential	400
	HP	116
	Non-HP (controls)	284
Exclusion criteria	Stage I sarcoidosis, previous Dx of HP, and pts referred for therapeutic evaluation of a known interstitial disease	67
Validation study	Same	261

Distribution of Diagnosis

- Two largest categories of HP were Pigeon Breeder's/Bird Fancier's Disease and Farmer's Lung
- Two largest categories of non-HP were Idiopathic Interstitial Pneumonia and Sarcoidosis

VALIDITY

Unique Gold Standard Lacking

- Derivation cohort was not a blinded comparison to a reference standard
 - Investigators who collected clinical data also gave their opinion on HP vs non-HP
- Validation cohort was conducted by investigators blind to the derivation rule

Confirming the diagnosis

- If diagnosis not established, additional diagnostic procedures could be obtained
- Committee evaluation of investigator's decision based on BAL and high resolution CT
- Disagreement settled by blinded radiologist and pathologist evaluation

Worldwide population

- Large variability in population studied
- Derived rule was associated with similar operating characteristics across all sites

Reproducibility

- "Potential Predictors" are clearly defined by a standardized clinical interview and testing
 - Possibility for subjectivity in reporting

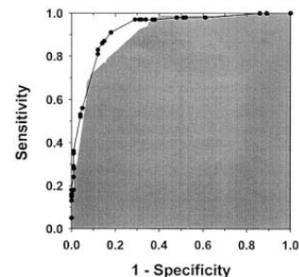
RESULTS

Derivation of the Prediction Rule

- Univariate analysis for statistical significance of 33 "Potential Predictors" ($p \leq 0.05$)
 - 18 significant variables identified
- Stepwise logistic regression identified 6 significant multivariate predictors
 - Odds ratios and 95% confidence intervals:

Variables	Coefficient	Odds Ratio	Confidence Interval
Exposure to a known offending antigen	3.66	38.8	11.6–129.6
Positive precipitating antibodies	1.68	5.3	2.7–10.4
Recurrent episodes of symptoms	1.20	3.3	1.5–7.5
Inspiratory crackles	1.51	4.5	1.8–11.7
Symptoms 4–8 h after exposure	1.97	7.2	1.8–28.6
Weight loss	0.70	2.0	1.0–3.9

- Receiver Operating Characteristic (ROC) curve
 - Threshold of probability of HP set at 45%
 - Sensitivity 86% (95% CI: 0.79-0.92)
 - Specificity 86% (95% CI: 0.81-0.90)
 - Area under curve = 0.93



APPLICABILITY

- Not all predictors are easy to assess
- Chart of probability allows for quick assessment based on 6 indicators
- International sampling allows for broad applicability
- Females represented 56% of the study population
- If HP more likely, patients can avoid antibiotic exposure
 - Corticosteroids hasten recovery, but have no effect on survival in farmer's lung¹
- If offending antigen is identified and avoided, prevention of future attacks can be achieved

¹ Kokkarinen JI, Tukiainen HO, Terho EO. Effect of corticosteroid treatment on the recovery of pulmonary function in farmer's lung. *Am Rev Respir Dis.* 1992;145:3–5