

Presentation of IPF & HP in an Avian Exposed Segment of Urban Population: Karachi Pulmonology Clinics Registry Data

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Purpose

Hypersensitivity Pneumonitis (HP), is a kind of interstitial lung disease (ILD) with symptoms of dyspnea and cough resulting from the inhalation of an antigen to which the person has been previously sensitized. Recurrent exposure to the avian antigen for a prolonged duration results in sub-acute and chronic types of HP ending in fibrosis.¹ The clinical and radiological presentation of chronic HP and the features of idiopathic pulmonary fibrosis (IPF) may often resemble each other.² (Figure 2)

In continuation of earlier presented data about the incidence of various ILDs in Karachi (estimated population 20 million)³, we observed a significant proportion of IPF & HP in the avian exposed part of population.⁴ Therefore we decided to investigate the profile of this stratified segment from the ongoing registry (www.ildpak.com).

Methods

Reevaluating the patient registry data recorded during January 2008 to August 2015 on a case to case basis we confirmed their HRCT findings and avian exposure history in IPF, sub-acute & chronic HP.

SPSS version 20 was used to analyze the data focusing four pulmonology clinics of Karachi city. Categorical data was presented in frequencies & percentages in table 1 and figure 1.

Results

In a total of 96 avian exposed patients; 66 (69%) belonged to the IPF and HP types. Out of 28 diagnosed HPs; 14 (50%) were of sub-acute nature and the rest had features of chronic HP. The mean age in years of these patients was; IPF: 60.5 ±9.6 SD Chronic HPs: 56.5 ±13.3 SD, and Sub-acute HPs: 46.8 ±13.6 SD. In these categories, reporting females outnumbered the males 1.8:1. Out of 43 (65.2%) reporting females, 37 (86%) were housewives living in tall rise apartments infested by hordes of pigeon population with a significant median exposure of 4 years. From these housewives; 22 (59.5%) were IPF & 15 (40.5%) HP while out of 23 reporting males there were 15 IPF (65%) and 8 HP (35%). Interestingly 5 out of these 8 male HPs were bird breeders. Restrictive pulmonary functions: Mean FVC 57% (±18%) predicted with FEV1/FVC ratio 89% (±13%). It was found that 7/28 (25%) HPs & 14/38 (36%) IPF also suffered from pulmonary hypertension.

Figure-1: Gender Wise IPF & HP Distribution (n=66)

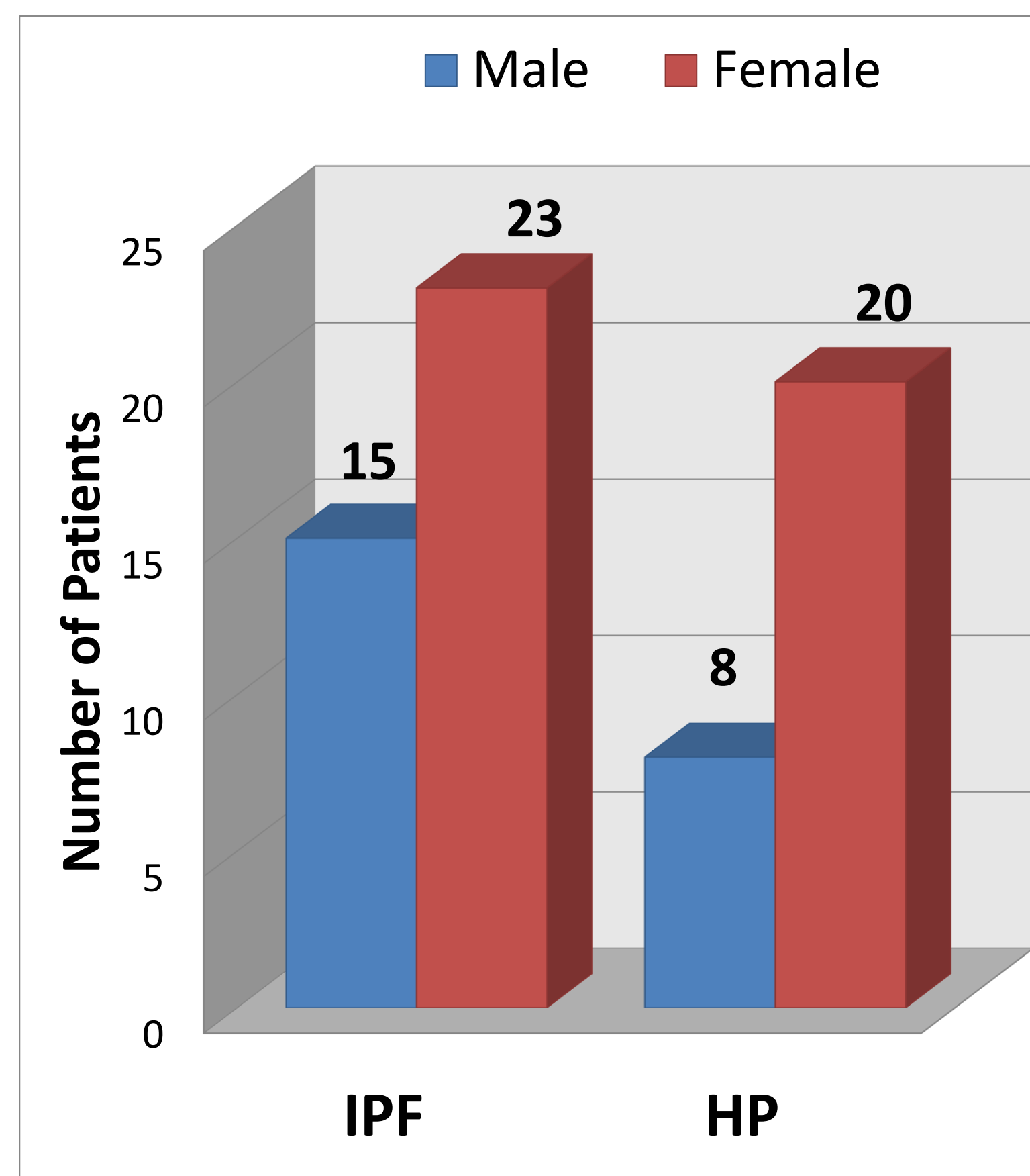
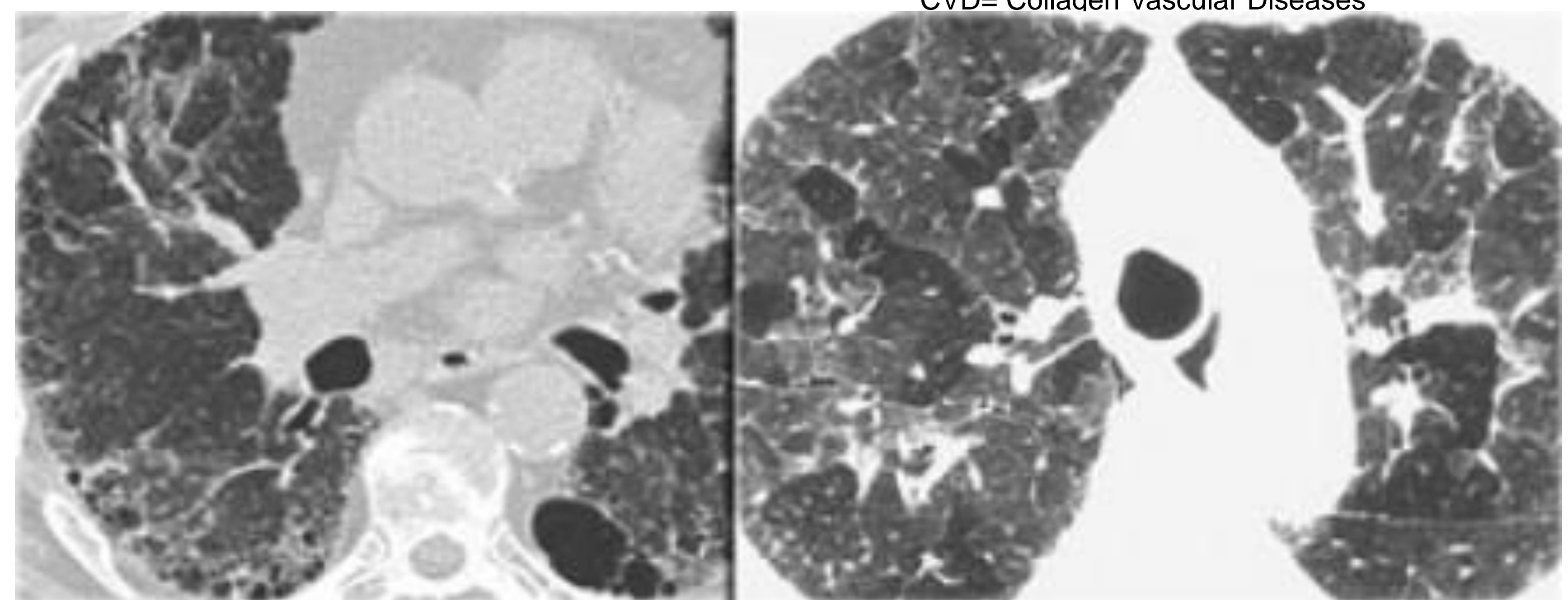


Table-1: Gender Wise Distribution of ILD Types In Avian Exposure: (n=96)

		Male (n=26)	Female (n=70)
Diagnosis	IPF	15 (57.6%)	23 (32.8%)
	HP	8 (30.7%)	20 (28.5%)
	NSIP	1 (3.8%)	6 (8.5%)
	Sarcoidosis	0	2 (2.8%)
	CVD	2 (7.6%)	17 (24.2%)
	Others	0	2 (2.8%)

IPF= Idiopathic Pulmonary Fibrosis, NSIP= Non Specific Interstitial Pneumonitis, HP= Hypersensitivity Pneumonitis, CVD= Collagen Vascular Diseases



UIP with honeycombing (left) and chronic HP (right)

Conclusion

The avian exposed segment of an urban population had significant incidence of HP & IPF which could be associated with the same domestic infestation by pigeons primarily affecting housewives for a prolonged duration of exposure.

Clinical Implications

This data suggests the importance of carefully reviewing avian exposure history in HP as well as in IPF and that chronic fibrosis is preventable in this population stratum with an early diagnosis and sound advocacy for environmental control.

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References

- de Gracia et al. Time of exposure as a prognostic factor in avian hypersensitivity pneumonitis. *Respir Med.* 1989 Mar;83(2):139-43.
- Ferran Morell et al. Chronic HP in patients diagnosed IPF. *The Lancet Respiratory Medicine.* Vol 1 No. 9. March 2014
- Ansarie M, Naseem A, Kasmani A, Ahmed R, Azeemuddin M. Profile of Interstitial Lung Diseases in Pakistan, Karachi Pulmonology Clinics Registry Data- Jan 2012-Aug 2013. *Chest* 2014 Mar 1;145(3) 241A
- <http://14.192.147.139/cdggk/Home/AboutKarachi/GeographyDemography/tabid/270/Default.aspx>. CDGK (official web portal of City District Government Karachi).