

INTRODUCTION

Several studies have been published reporting that occupational exposure to wood dusts can induce allergy with respiratory and nasal disorders but only a few to ash wood dust are reported.

This exposure has been shown to cause a type I hypersensitivity; nevertheless an IgE-mediated sensitization has not always been elucidated so it is important to make a complete detailed study.

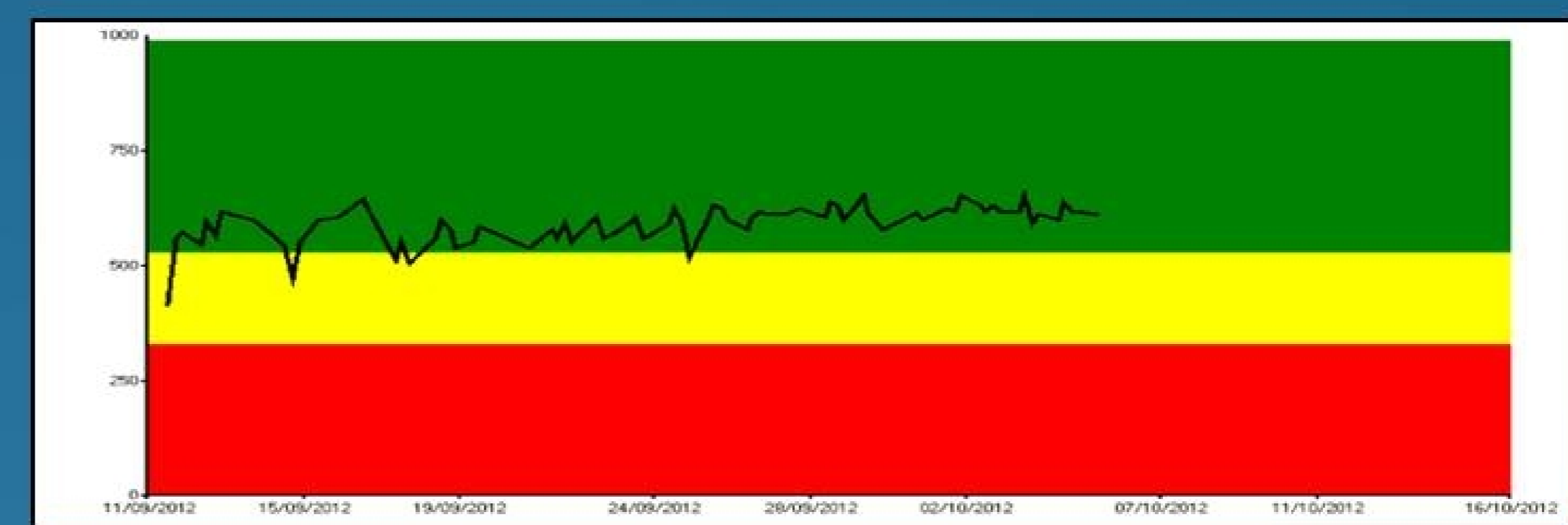
METHODS

We present a case of a 30-year-old man without atopic backgrounds who work in a furniture factory for over 10 years . He was referred to our clinic with a 2-year history of nasal and respiratory symptoms after working with different woods as ash, sapeli , samba and iroko.

The patient referred that the symptoms began after some minutes working and disappeared out of work. Apparently there were worst when he manipulate ash wood.

RESULTS

Skin prick tests (SPT) were negative for a battery of common allergens and commercial extracts of woods. The spirometry was normal. Methacholine challenge was positive (PC20: 5.16 mg/ml). Fractional exhaled nitric oxide (FENO) was also positive (89 ppb).



Peak Flow measure showing the decrease during work

Specific inhalation challenges were carried out with ash and sapeli (control) wood dust. The nasal response to the challenges was measured as symptom scores for rhinorrhea and congestion, counts for sneezing (positive > 5) , weight for expelled secretion (positive > 500 mg) and nasal inspiratory peak flow. (positive > decrease 30%). Also the forced expiratory volume (FEV1) was measured.

WOOD COMMERCIAL EXTRACTS	PRICK TEST (mm ²)
Iroko	0
Ash	0
Sapeli	0
Framire	0
Sapelli	0
Pine	0
Samba	0
Embero	0
Ceder	0
Flanders	0

PIFR _N	L/min	Basal	Vinilo	1 min	3 min	6 min	15 min	30 min	60 min
		140	140	140	150	160	140	150	150
N			0	0	7	14	0	7	7
			0	0	0	0	2777	3800	5425
			0	0	1	1	2	0	2
FEV ₁	mL	3640	3640	3780	3690	3970	3520	3450	3780
	%		0	4	1	9	-3	-5	4

PIFR _N	L/min	Basal	Vinilo	1 min	3 min	6 min	15 min	15 min
		150	150	100	120	120	120	120
N			0	-33	-20	-20	-20	-20
			0	3213	2735	2906	3800	2730
			0	3	2	5	3	3
FEV ₁	mL	3810	3810	3510	3650	3530	3450	2950
	%		0	-8	-4	-7	-9	-23

PIFR _N	L/min	Basal	Vinilo	1 min	3 min	6 min	15 min	30 min	60 min
		100	100	100	100	100	100	120	110
N			0	0	0	0	0	20	10
			0	0	2203	2722	1495	5410	1342
			0	0	2	1	1	2	3
FEV ₁	mL	3450	3450	3450	3520	3470	3310	3350	3400
	%		0	0	2	1	-4	-3	-1

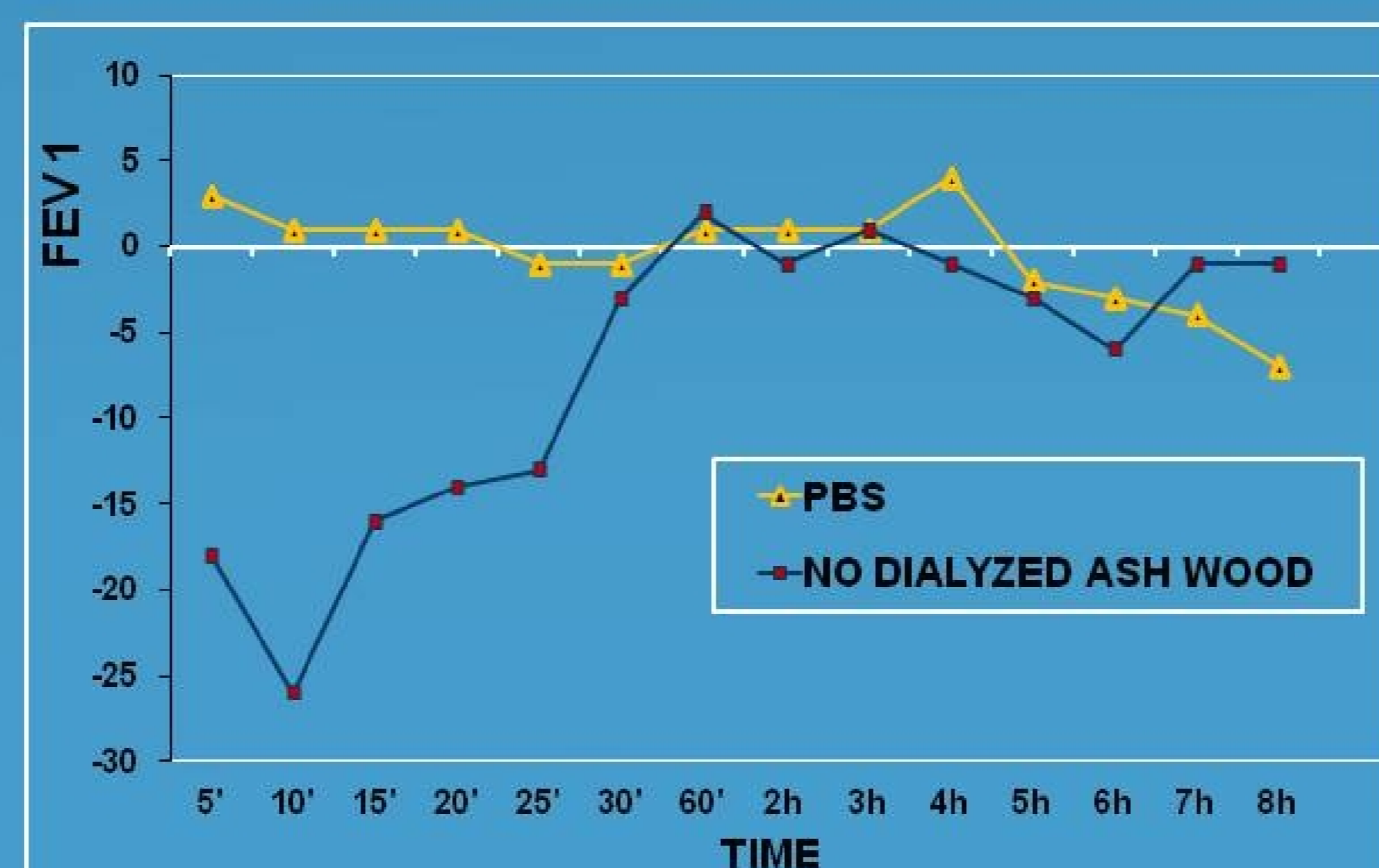
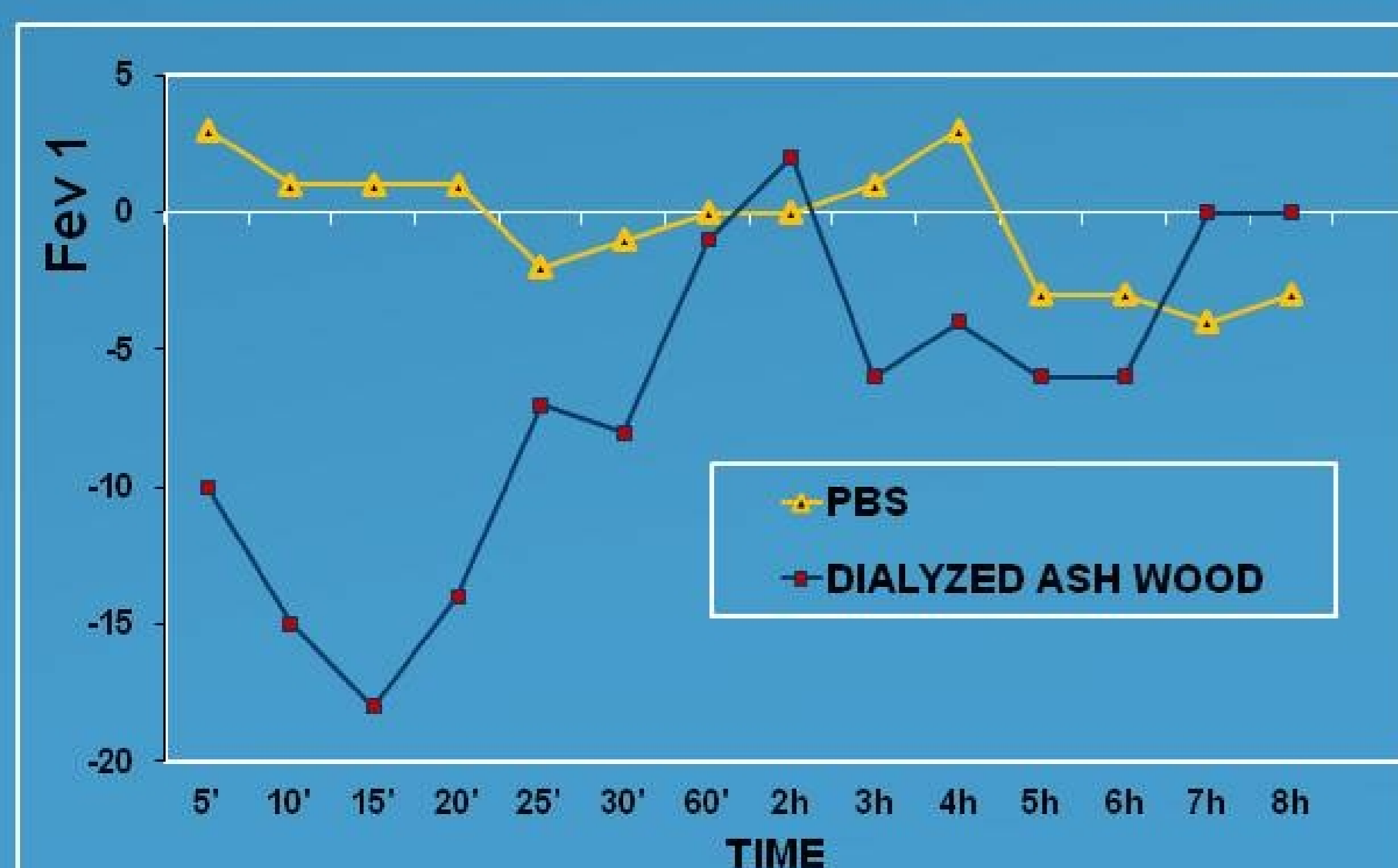
SPECIFIC INHALATION CHALLENGE

Sapely wood dust - NEGATIVE

Ash wood dust - POSITIVE

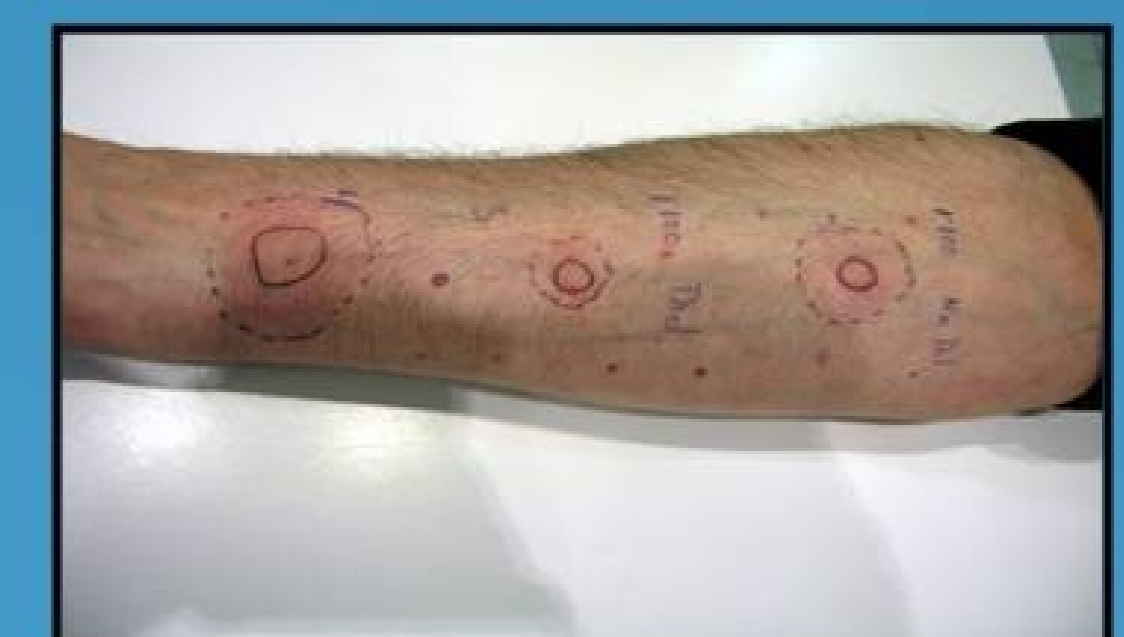
Ash wood dust (HEP filter mask) – NEGATIVE

Bronchial provocation tests with dialyzed ash wood dust extract induce a decrease in FEV1 in 18% (15 minutes) and 26% (10 minutes) with non dialyzed extract.



Specific IgE to ash wood : NEGATIVE.
Intradermal testing (ID) with dialyzed and not dialyzed ash extracts :POSITIVE(1:100).

WOOD COMMERCIAL EXTRACTS		INTRADERMAL RESULTS
SALIN SOLUTION	0.9%	0
HISTAMIN	0.1mg/ml	+3
NO DIALYZED	1:10000	0
	1:1000	0
	1:100	+2
	1:10	-
DIALYZED	1:10000	0
	1:1000	0
	1:100	+2
	1:10	-



Two controls (1:10) NEGATIVE

He was treated with nasal corticosteroids, antihistamines and the recommendation to use anti-allergen mask during work. After 3 months he showed improvements in symptoms and serial peak flow monitoring with negative results and normalized FENOs

CONCLUSION

We report a case of a patient with occupational asthma due to hypersensitivity type I to ash wood dust with negative skin prick tests and specific IgE that was confirmed with serial provocations and intradermal tests.