## References


1. Galie N, Humbert M, Vachiery JL, Gibbs S, Lang I, Torbicki A, et al. 2015 ESC/ERS Guidelines for the diagnosis and treatment of pulmonary hypertension. Eur Heart J. 2016;37:67–119.
2. Sitbon Olivier, Channick Richard, Chin Kelly M, Frey Aline, Gaine Sean, Galiè Nazzareno, et al., GRIPHON study. Selexipag for the treatment of pulmonary arterial hypertension. N Engl J Med. 2015;373:2522–33.
3. Lázaro Salvador M, Akerström F, Escribano Subías P, Berenguel Senén A, Martinez Mateo V, Rodriguez Padial L. Living with severe pulmonary arterial hypertension without an infusion pump? Selexipag has a role to play. Arch Bronconeumol. 2018, http://dx.doi.org/10.1016/j.arbres.2018.03.010. pii:S0300-2896(18)30154-6.
4. Boucly A, Weatherald J, Savale L, Jaïs X, Cottin V, Prevot G, et al. Risk assessment, prognosis and guideline implementation in pulmonary arterial hypertension. Eur Respir J. 2017, http://dx.doi.org/10.1183/13993003.00889-2017.
5. Fanous SM, Janmohamed M. Transition from treprostinil to selexipag in patients with pulmonary arterial hypertension: case series. Am J Health Syst Pharm. 2018;75:1877–81, http://dx.doi.org/10.2146/ajhp170814 [Epub ahead of print].



María Lázaro Salvador,[a,*] Pilar Escribano Subías,[b] Luis Rodriguez Padial[a]

[a] *Department of Cardiology, Hospital Virgen de la Salud, Toledo, Spain*
[b] *Department of Cardiology, Hospital Universitario 12 de Octubre, Madrid, Spain*

* Corresponding author.
*E-mail address:* maria.lasal@gmail.com (M. Lázaro Salvador).


1579-2129/


## Silicosis Caused by Artificial Quartz Conglomerates: Keys to Controlling an Emerging Disease☆

### *Silicosis por aglomerados artificiales de cuarzo: claves para controlar una enfermedad emergente*

*To the Editor,*

The interesting editorial by Martínez-González[1] on changes in the clinical and epidemiological profile of pneumoconiosis caused by exposure to silica in our country highlights a novel source of exposure: the emergence in the 1990s of artificial quartz agglomerates (AQA) for the construction of kitchen worktops and surfaces.

In the Spanish province of Cadiz between 2009 and 2012, we detected a cluster of cases in small family decorative stone-working businesses in local industrial parks, where exposed workers specializing in the machine-working of AQA were employed in poor working conditions. In our experience, this emerging silicosis affects young men after intense exposure over short periods of time.[2,3]

Despite awareness of the danger of this exposure, deficiencies in health and safety measures continue to be detected. As an example, we present the clinical and occupational characteristics (Table 1) of a new cluster of 7 cases diagnosed with simple chronic silicosis at the end of 2015, originating in a decorative stone-working company in Seville employing 11 workers. Mean age at diagnosis was 34.9 years, mean employment history in the company was 11.6 years, and the prevalence of silicosis was 63.6%. Dry polishing, cutting and finishing were carried out in the workshop and in homes, and these finishing activities continued to be performed using dry techniques, despite introducing machinery with water intake in 2011. It is interesting to note the family relationships between 4 of those affected.

Six of the silicosis cases were diagnosed using high-resolution computed tomography (HRCT), and the seventh was diagnosed by transbronchial biopsy after a history of occupational exposure was collected. No standard chest X-rays were performed in examinations conducted before diagnosis. In our practice, the health monitoring of exposed workers must include a standard chest X-ray, although HRCT is useful if the radiological findings are unclear, and for monitoring slow-progressing disease.[4] However, confirmatory diagnostic criteria in the management of radiological tests must be fulfilled.

With regard to prevention, doubts have been raised as to the effectiveness of daily exposure limits. In 2015, the National Institute for Health and Safety at Work decreased the limit for free crystalline silica exposure from 0.1 mg/m$^3$ to 0.05 mg/m$^3$, but the institutions involved must be aware that this reduction in daily exposure limits must also be accompanied by greater rigor

**Table 1**
Clinical and occupational characteristics of workers.

| Series | Age at diagnosis (years) | Working history (years) | Position | Diagnostic test | Spirometric pattern DLCO | mMRC dyspnea | Personal history | Toxic habits | Affected relative |
|---|---|---|---|---|---|---|---|---|---|
| Case 1 | 30 | 10 | Workshop, home | HRCT | Normal | Grade 1 | Asthma, rhinoconjunctivitis | Active smoker | No |
| Case 2 | 33 | 16 | Workshop | HRCT | Mild obstructive | Grade 1 | Asthma, pericarditis | No | Father (case 3). |
| Case 3 | 54 | 10 | Home | HRCT | Normal | Grade 1 | Not significant | Active smoker | Son (case 2). |
| Case 4 | 39 | 13 | Home | HRCT | Mild reduction in DLCO | Grade 2 | Phthisis bulbi right eye, mild hearing loss right ear | Active smoker | Brother (case 5). |
| Case 5 | 31 | 14 | Workshop | HRCT | Normal | Grade 1 | Not significant | Active smoker | Brother (case 4). |
| Case 6 | 30 | 12 | Workshop | HRCT | Normal | Grade 1 | Psoriasis | No | No |
| Case 7 | 27 | 6 | Workshop, home | Transbronchial biopsy | Normal | Grade 1 | Not significant | No | No |

DLCO: diffusing capacity of carbon monoxide; mMRC: Modified Medical Research Council dyspnea scale; HRCT: high-resolution computed tomography.

☆ Please cite this article as: Pérez-Alonso A, Córdoba-Don˜a JA, León-Jiménez A. Silicosis por aglomerados artificiales de cuarzo: claves para controlar una enfermedad emergente. Arch Bronconeumol. 2019;55:394–395.

in the implementation of both preventive measures and inspections.

Due to the seriousness of the situation in Andalusia (between 2007 and 2015, 126 cases of occupational disease due to silicosis in workers exposed to AQA were reported), a comprehensive pioneer program for this new form of silicosis was proposed in 2017, that is still pending evaluation.[5]

Although the economic crisis resulted in a decline in the construction sector and consequently in the manufacture and installation of AQA worktops, a resurgence of this economic activity has been observed, so surveillance and monitoring of this emergent form of silicosis must be stepped up, in order to ensure safe and healthy workplaces and to protect workers and their families after diagnosis.

## Conflicts of interest

The authors declare no conflicts of interest.

## References

1. Martínez-González C. Cambio en el perfil de las enfermedades por la exposición a la inhalación de sílice. Arch Bronconeumol. 2018;54:5–6.
2. Pérez-Alonso A, Córdoba-Doña JA, Millares-Lorenzo JL, Figueroa-Murillo E, García-Vadillo C, Romero-Morillo J. Outbreak of silicosis in Spanish quartz conglomerate workers. Int J Occup Environ Health. 2014;20:26–32.
3. Pérez-Alonso A, Córdoba-Doña JA, García-Vadillo C. Aportaciones de la tomografía axial computarizada de alta resolución en la detección precoz de silicosis. Arch Bronconeumol. 2015;51:528–9.
4. Tamura T, Suganuma N, Hering KG, Vehmas T, Itoh H, Akira M, et al. Relationships (I) of international classification of high-resolution computed tomography for occupational and environmental respiratory diseases with the ILO international classification of radiographs of pneumoconioses for parenchymal abnormalities. Ind Health. 2015;53:260–70.
5. Álvarez Zarallo JF, Cabrera Eisman JP, Córdoba Doña JA, García Ruiz F, Leal Reina FJ, Rabadán Asensio A. Programa Integral de Silicosis de Andalucía en el manipulado de aglomerados de cuarzo PL Sevilla. Consejería de Salud, Consejería de Empleo, Empresa y Comercio; 2017. Disponible en: https://www.repositoriosalud.es/handle/10668/2685

Aránzazu Pérez-Alonso,[a,*] Juan Antonio Córdoba-Doña,[b] Antonio León-Jiménez[c,d]

[a] *Servicio de Medicina Preventiva y Salud Laboral, Hospital Universitario de Puerto Real, Puerto Real, Cádiz, Spain*
[b] *Servicio de Salud Pública, Delegación Territorial de la Consejería de Salud, Cádiz, Spain*
[c] *Servicio de Neumología, Hospital Universitario Puerta del Mar, Cádiz, Spain*
[d] *Servicio de Neumología, Hospital Universitario Puerto Real, Puerto Real, Cádiz, Spain*

* Corresponding author.
*E-mail address:* aranzazu.perez.sspa@juntadeandalucia.es (A. Pérez-Alonso).

1579-2129/


## Data Collection and Microbiological Monitoring in Global Tuberculosis Intervention☆

### *Recogida de datos y control microbiológico para la intervención global de la tuberculosis*

*To the Editor,*

We read with interest the article published by Caylà and Caminero,[1] and in line with their proposal to update and implement a national program for the control of tuberculosis (TB) for Spain, we would like to contribute to this effort from Castile-Leon and emphasize the importance of epidemiological surveillance, microbiological control, and diagnosis and treatment of this disease.

TB generates a high burden of morbidity and mortality worldwide, and it is estimated that 1.7 billion (23%) of the world's population is infected with *Mycobacterium tuberculosis*.[2] The distribution of the disease burden varies significantly depending on the region, and it was estimated that in 2017, 44% of cases occurred in the World Health Organization (WHO) South-East Asia region, 25% in Africa, 18% in the Western Pacific region, and 7.7% in the Eastern Mediterranean region. Incidence is lower in the Americas (2.8%) and Europe (2.7%).[3]

In total, 1419 new cases of TB were reported to the Epidemiological Surveillance Network of Castile-Leon in the 5-year period between 2012 and 2016.[4] Incidence rates have remained steady, ranging from 10.5 new cases per 100 000 inhabitants reported in 2012 to 10.1 TB cases per 100 000 inhabitants in 2016. The incidence of confirmed cases shows a declining trend, from 11.7 cases per 100 000 inhabitants in 2012 to 8.6 cases per 100 000 in the year 2016. Median age in men is 58 years and 48 years in women, with a male/female ratio ranging between 1.54 in 2014 and 1.94 in 2016.

Etiology from bacteriological diagnosis identifies *Mycobacterium tuberculosis* as the most frequently isolated microorganism, detected in 71% of cases. Antibiotic sensitivity testing of the series found 83 resistance patterns, of which 32 (39%) involve pyrazinamide resistance and 21 (25%) isoniazid resistance. Analysis of the follow-up results shows that in 2015, 67% had received satisfactory treatment, defined as cure and completed treatment.[4]

The increasing prevalence of resistance in Castile-Leon since the beginning of this decade (1.2% to streptomycin; 3.2% to isoniazid; 0.3% to rifampicin; 0.1% to ethambutol; and 0.5% to pyrazinamide)[5] underlines the need for maintaining active surveillance and performing sensitivity studies, particularly when in Europe it is estimated that 17% (95% CI: 16%–18%) are new cases and 53% (95% CI: 46%–61%) of previously treated cases have methicillin-resistant and/or multidrug-resistant TB.[3]

Our view, reflected by other authors,[6] is that the rational and sequential use of antituberculous drugs is of utmost importance when designing TB treatment, be it sensitive or resistant.

Follow-up indicators and compliance with the criteria of the Plan for the Prevention and Control of Tuberculosis, agreed by the autonomous communities and approved by the Public Health Commission in June 2013, have improved in the years under study. However, it is essential that registries also improve, including the recording of appropriate microbiological data, if we are to achieve the proposed objectives and accelerate progress toward the global goals and milestones set down by the WHO for reducing the burden of TB disease, scheduled for 2020, 2025, 2030 and 2035.[3]

☆ Please cite this article as: López-Gobernado M, Pérez-Rubio A, Lopez-García E, Eiros JM. Recogida de datos y control microbiológico para la intervención global de la tuberculosis. Arch Bronconeumol. 2019;55:395–396.