IMPACT OF INHALERS ON CO_2 EMISSION IN A HEALTH AREA

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SPD-018
R03- DRUGS FOR OBSTRUCTIVE AIRWAY DISEASES

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BACKGROUND AND IMPORTANCE

There are several types of devices for inhaled therapy, being the most used ones: pressurised metered-dose inhalers (pMDIs), dry-powder inhalers (DPIs) and soft mist inhalers (SMIs). All the types have some environmental impact due to their effect on **CO_2 emissions**, although very low compared to total CO_2 emissions, pMDIs have proven to exert higher CO_2 emissions than DPIs and SMIs.

AIM AND OBJECTIVES

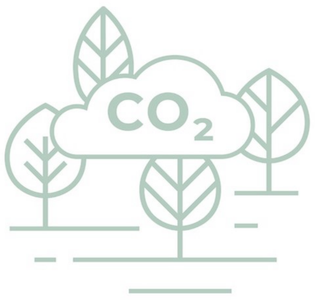
The main objective is to estimate the **impact of inhalers** (pMDIs, DPIs and SMIs), prescribed for any indication, on CO_2 emissions in our health care area during one year.

MATERIAL AND METHODS

Number of inhalers consumed in our health care area with a population of 550086 inhabitants during 2022 was extracted from the General Subdirectorate of Pharmaceuticals.
The inhalers' **carbon footprint** values were extracted from the publication Montoro et al.

	Carbon footprint estimated mean value (Kg CO_2-eq/year/pack)
pMDIs	16.69
DPIs	1.02
SMIs	0.59

RESULTS



	Inhalers consumed		Carbon footprint		
	N	%	Kg CO_2-eq/year/pack	Kg CO_2-eq/year	%
pMDIs	137678	39.21 %	16.69	2297845.82	91.69 %
DPIs	191278	54.47 %	1.02	195103.56	7.79 %
SMIs	22212	6.33 %	0.59	13105.08	0.52 %
Total	351168			2506054.46	

CONCLUSION AND RELEVANCE

The carbon footprint of the pMDIs represented more than 90 % of the total carbon footprint of all the inhalers, even when consumption of pMDIs represented less than the 40 %. This put in evidence the considerable higher environmental impact of pMDIs compared to DPIs.

However, this does not go in line with several societies and organisms which keep defending that efficacy, safety and patient suitability must continue to be the main factors when choosing a type of inhaler for each patient.

REFERENCES AND ACKNOWLEDGEMENTS

Montoro J, et ak. Impact of Asthma Inhalers on Global Climate: A Systematic Review of Their Carbon Footprint and Clinical Outcomes in Spain. J Investig Allergol Clin Immunol. 2023 Jul 27;33(4):250-262. doi: 10.18176/jiaci.0887.

The authors acknowledged the General Subdirectorate of Pharmaceuticals – Galician Health Service (Spain).