AIR POLLUTION IMPACTS ON CHILDREN AND ADOLESCENTS QUALITY OF LIFE

Interventions on air pollution and CRD

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Background/Aim

- According WHO 2016, around 600,000 deaths among children under of 15 y.o. were attributed to the combined effects of indoor and outdoor air pollution;
- Early identification of respiratory problems in children and young people is an important measure that can generate preventive measures reducing the impact of severe respiratory conditions;
- Santa Gertrudes (SG) ranks first among all cities with air PM10 (particulate matter ≤10 um) measurements in Brazil;
- PM10 sources in this town are originated from a ceramic industrial park zone, silica predominance.
- To identify symptoms and health related quality of life (QOL) respiratory problems in children and young adults.

Methods

- Public high school students 8-18 y.o were invited to participate; parental or legal guardian consent was provided;
- Application of asthma and rhinitis sections of the ISAAC (International Study of Asthma and Allergies in Childhood) questionnaire;
- KIDSCREEN 27 questionnaire (K27) was applied for QOL measures between the most polluted city of Brazil compared with a lower polluted ones
- K27 focused a simple question "do you need frequent health care or have a serious illness?";
- Atopic (bronchitis, rhinitis,sinusitis,dermatitis) and non-atopic analysed.

ISAAC questionnaire data

ISAAC quest	SG polluted	RC less polluted	SP non polluted	p
Rhinitis score mean	5.01	4.49	3.80	0.02*
Rhinitis score > 3	94 (59.5%)	92(59.7%)	68 (50%)	NS
Asthma score mean	2.77	2.41	2.34	NS
Asthma score > 6	26 (16.5%)	4 (16.9%)	23 (16.9%)	NS

n=509; K27 score =42 worse (<) Brazilian & Universal Scores (~ 50)
No diferences between cities
15% Atopic: 94% from polluted cities (K27=37)

Implications and messages

- In this sample we cannot identify symptoms defining asthma in volunteers, but a small signal of rhinitis prevalence in polluted cities;
- Kidscrren Questionnaire 27 can be useful as a predictive of impairment when involved air pollution of the city of residence and susceptible to atopic respiratory diseases;
- Pollution impairment is one of the factors enhancing the risks of CRDs in a young population, adding with other innate or acquired factors, leading to a mandatory early prevention scenario to avoid severe or persistent disease in adulthood.