

FRESH AIR Uganda: the day after

Letter 7: October 2013

At the end of 2012 FRESH AIR Uganda completed the survey in Masindi district on the prevalence of COPD at its risk factors such as tobacco smoke and biomass fuel use. It has been a very successful survey and a lot of data has been collected.

	male	female
subject no.	49.5% (n=291)	50.5% (n=297)
age in years (± SD)	45.0 ± 12.8	45.4 ± 14.5
BMI (± SD)	22.2 ± 3.2	23.7 ± 4.9
smoking status		
current smoker	34% (100)	7% (22)
former smoker	22% (63)	8% (24)
never smoker	44% (128)	85% (252)
biomass fuel		
indoor exposure	91% (265)	95% (281)
time per day	3.1 hours	5.2 hours
years	25.5	33.4
outdoor exposure	90% (262)	95% (282)
time per day	1.3 hours	1.9 hours
years	20.3	25.5
kerosene	95% (275)	93% (277)

Out of the 620 participants recruited for the survey, 588 were completed with acceptable spirometry in accordance with ATS/ERS guidelines. 83% of the participants lived in rural areas and 71% were between 30 and 50 years. 34% of the men smoked; of these 52% were under the age of 40 years. 95% of the households exposed to biomass smoke used wood as main solid fuel. Not only women, but also men were exposed to biomass smoke. Almost everyone used kerosene lamps for lighting .

Using the lower limit of normal as defining criterion, FRESH AIR Uganda found a prevalence COPD of 16.2% above the age of 30 years. It was most interesting to see that almost 39% of the people with COPD were between 30 and 39 years of age (37% men and 40% women). Only 7% were above the age of 70 years.

Among the people with COPD, 45% of men were current smokers (mean age 40, median age 38). In age group 30-39 years, 65% of the men (5.1 ± 2.8 pack years) were current-smokers and 18% were former-smokers. Only 8% of the women were current-smokers (mean age 52, median age 54). In age group 30-39 years, 90% of women were never-smokers. Above the age of 70 years, nobody smoked at all, except for 2 women.

Most people of all ages (including the children) are exposed to biomass smoke. Furthermore, the rate of tobacco smoking is high, particularly among young men. COPD represents a major threat for people of all ages in rural Uganda. Further analysis will examine the interaction of tobacco smoke, biomass fuel use, and other factors in the development of COPD. A priority is to increase the knowledge of harmful effects of biomass fuel and tobacco smoke in the various communities and promoting awareness among healthcare workers and policy makers.



Assessing lung function in Masindi

In 2013, Masindi hospital and the HC IV are able to perform spirometry. All the other HCs will use the COPD-6 device (a hand-held spirometer from Vitalograph) to be used as a pre-screening tool for individuals at risk for COPD. This device is easily used and can be performed within several minutes. As the hospital and HC IV can be too far for the community, FRESH AIR Uganda is checking the

possibility to perform spirometry at different health centers (4 times a year), as the spirometer and laptop can be easily put in a rucksack (as it has been done during the survey). As a result, someone living in a remote area doesn't have to travel long distances to receive diagnostic services.

New projects: mobile phone technology

In Africa, paper-based systems are still common to monitor diagnosis and treatment of different communicable and non-communicable diseases, making the administrative system slow and labour-intensive. It also limits the ability of health workers to analyse the copious amounts of data generated. Although most of the health centres do not have access to electricity, almost all the



healthcare workers (nurses and health officers) do have a mobile phone, and are able to use SMS. Most of the village leaders have a mobile phone too, even though the villages don't have access to electricity either. Once a week, the village leader will go to Masindi town with his motorcycle to recharge a number of mobile phones. m-Health can offer opportunities to strengthen the capacity of the health workers in the field and expand the coverage of COPD and inform the communities about the detrimental effects of tobacco smoke and

biomass fuel use. A pilot survey, funded by the IPCRG, is being planned to measure the potential impact of m-Health for health workers in COPD in Masindi district.

During my last visit to Masindi (August 2013), the first results were presented to the complete government of Masindi district. We discussed issues as public health promotion, primary and secondary prevention (including to possibility to obtain inhalation medication). They even thought of starting a Respiratory Training Center in Masindi town for health workers working in other districts and other countries of East Africa. At the end of our meeting, everybody prayed and thanked all the people involved with FRESH AIR Uganda. Partnership with the policy makers was established.

Future developments

In the near future, a lot has to be done:

- Strengthening national policies for the prevention and control of COPD, working with local partners
- Designing and testing sustainable local interventions to reduce population exposure to the main risk factors as tobacco smoking and biomass fuel use
- Working with agencies that promote maternal and child health to include prevention of chronic respiratory disease
- Undertaking research about interventions for people with COPD including education, pulmonary rehabilitation and access to medicines
- Monitoring COPD and its risk factors and evaluate progress at regional and national levels
- Spreading the learning to other East African countries, and other IPCRG colleagues in areas of high biomass fuel use

This will be the next phase of FRESH AIR Uganda, and a spearhead of IPCRG.

Frederik van Gemert, project lead

This FRESH AIR survey has been funded by IPCRG, supported by a grant from Mundipharma International Ltd and benefiting from volunteers. Fundraising for the next phase has begun. We welcome expressions of interest in supporting this work.