

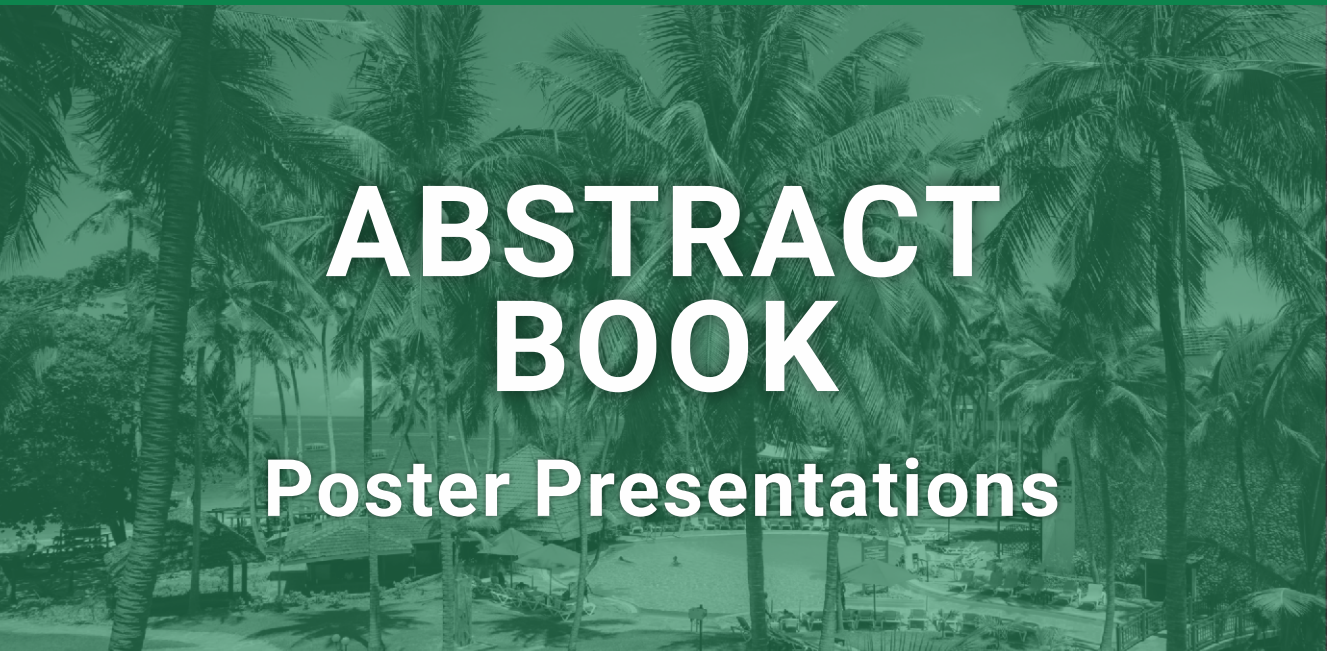


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ABSTRACT BOOK

Poster Presentations



Lower plasma nitric oxide and pulmonary function parameters in Nigerian children with sickle cell anaemia compared to non-sickle cell children

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Introduction

Advancements in health care have led to increased chances of survival of children with sickle cell anaemia (SCA) with consequent prolonged morbidities including lung diseases. This study sets out to determine the prevalence of pulmonary function abnormalities and plasma nitric oxide (NO) levels (a biomarker of lung disease) in children with SCA in steady state and that of their non- SCA counterparts at a Nigerian tertiary health facility.

Methods

Children aged 6-15 years with SCA (87) and Hb AA (87) were consecutively recruited and characterised over a seven-month period at the Obafemi Awolowo University Teaching Hospitals Complex, Ile-Ife, Nigeria. Their pulmonary function parameters [FEV1%, FVC% and PEF (L/sec)] were assessed using Spirolab III spirometer (Medical International Research, Srl Italy) and interpreted based on ATS/ERS guidelines. Their plasma NO assayed via Enzyme-linked immunosorbent assay method (biosource, San Diego, USA) and compared.

Results

and 2.3% for SCA, and Hb AA respectively. The pattern was possible restrictive (50.6%), obstructive (3.4%) and mixed ventilatory patterns (5.8%). Pulmonary function parameters and plasma NO [166.9 (126.0 – 275.1) vs. 460.0 (378.6 – 562.0 micromoles/litre); $p < 0.001$] were lower in SCA compared to the AA. However, no correlation exists between pulmonary function and plasma NO levels.

Conclusion

There are more spirometric and biomarker evidences of lung diseases in children and adolescents with SCA than Hb AA. Routine pulmonary function assessment in children with SCA will facilitate early detection and prompt management of lung diseases in these children.

Inf- γ and Il-2 Asses the Therapeutich Response in Anti-tuberculosis Patients at Jamot Hospital Yaounde, Cameroon

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Introduction

Tuberculosis (TB) is one of the top lethal infectious diseases worldwide. In recent years, interferon- γ (INF- γ) release assays (IGRAs) have been established as routine tests for diagnosing TB infection. However, produced INF- γ assessment failed to distinguish active TB (ATB) from latent TB infection (LTBI), especially in TB epidemic areas. In addition to IFN- γ , interleukin-2 (IL-2), another cytokine secreted by activated T cells, is also involved in immune response against Mycobacterium tuberculosis. The aim of the study was to assess the capacity of IFN- γ and IL2 in the follow-up of patients on anti-tuberculosis treatment

Methods

We conducted a cross-sectional study in the Pulmonological Departments of the Jamot Hospital in Yaoundé between May and August 2021. After signed the informed consent, the sociodemographic data as well as 5 mL of blood were collected in the crook of the elbow of each participant. Sixty-one subjects were selected (n= 61) and divided into 4 groups as followed: group 1: resistant tuberculosis (n=13), group 2: active tuberculosis (n=19), group 3: cured tuberculosis (n=16) and group 4: presumed healthy persons (n=13). The cytokines of interest were determined using indirect Enzyme-linked Immuno-Sorbent Assay (ELISA) according to the manufacturer's recommendations. P-values < 0.05 were interpreted as statistically significant. All statistical calculations were performed using SPSS version 22.0

Results

The results showed that men were more 14/61 infected (31,8%) with a high presence in active and resistant TB groups. The mean age was 41.3 \pm 13.1 years with a 95% CI = [38.2-44.7], the age group with the highest infection rate was ranged between 31 and 40 years. The IL-2 and INF- γ means were respectively 327.6 \pm 160.6 pg/mL and 26.6 \pm 13.0 pg/mL in active tuberculosis patients, 251.1 \pm 30.9 pg/mL and 21.4 \pm 9.2 pg/mL in patients with resistant tuberculosis, while it was 149.3 \pm 93.3 pg/mL and 17.9 \pm 9.4 pg/mL in cured patients, 15.1 \pm 8.4 pg/mL and 5.3 \pm 2.6 pg/mL in participants presumed healthy (p <0.0001). Significant differences in IFN- γ and IL-2 rates were observed between the different groups.

Conclusion

Monitoring the serum levels of INF- γ and IL-2 would be useful to evaluate the therapeutic response of anti-tuberculosis patients, particularly in the both cytokines association case, that could improve the accuracy of routine examinations.

Prevalence and Determinants of Respiratory Symptoms Among Commercial Taxi Drivers in Douala Cameroon

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Introduction

Respiratory disorders are among the top causes of morbidity and mortality worldwide. Exposure to air pollutants leads to inflammation and changes in lung function (Damayanti et al, 2019). Occupational taxi drivers with long exposures to traffic related air pollution are more susceptible to the effects (Tall et al, 2018). There are reports of high prevalence of respiratory symptoms among occupational workers (Lawin et al, 2018). This study was aimed to determine the prevalence and determinants of respiratory symptoms among commercial taxi drivers (CTDs) in Douala

Methods

Our study was a community based cross-sectional study; data was collected using Kobo tool collect from June to July 2022 in Douala with 282 CTDs gotten using convenient sampling technique. SPSS version 21 was used for data analysis considering CI of 95% and 5% margin of error. Descriptive and inferential statistics (Chi-square test and logistic regression) were used to determine the association between variables. Administrative authorization was gotten from the Delegation of Public Health and Ethical Clearance from the University of Douala.

Results

The study participants had a mean age of 42.49 (SD 9.14), years of driving 12.01 (SD 8.24), working days per week 5.99 (SD 0.72), working hours per day 10.38 (SD 1.99). Cough 42(21%), Phlegm 27(13.5%), Shortness of breath 14(7.0%), Eye irritation 50(25%), Nasal discharges 70(35%), Chest pain 19(9.5%), Wheezing 12(6%), Sore throat 24(12%). Logistic regression shows that years of driving ($p=0.003$), smoking ($p=0.038$) and health history ($p=0.002$) were the associated with respiratory symptoms, with ever smoked cigarette being the most predictive determinant (COR=5.75 CI=2.35-14.06 $p=0.001$)

Conclusion

Respiratory symptoms were reported among the CTDs. Driving experience, consulted for a respiratory problem, daily working hours and ever smoked cigarette were associated with the respiratory symptoms. CTDs should limit their exposure time to traffic related air pollutants and go for screening of respiratory problems.

How overcrowding affects the transmission of TB in African counties (case study, Nairobi Kenya)

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Introduction

There has been an increasing number of Tb patients in slums areas. A study published in the International Journal of Tuberculosis and Lung Disease in 2017 found that overcrowding was significantly associated with TB infection in households in Kampala, Uganda.

The purpose of this study was to establish the extent to which overcrowding increases the chances of TB transmission.

Methods

Two methods were used in collecting data ,this included Questionnaires and oral questions .Questionnaires were mainly used where the respondents were not willing to orally disclose their area of residence while oral questions were administered to patients who visited Rhodes chest clinic and different hospitals within Nairobi .An outreach was conducted in Mthurwa market ,(which is generally a crowded area) using questionnaires , in the month of early February for a week with 70 participants.

in the second week of January 2023, 80 patients were screened for TB.

In the month of January 2023 , 645 patients were tested positive for TB at Rhodes chest clinic .

Results

Out of 70 participants who participated in mthurwa market Tb testing , in the month of early February 2023, 15 of them were positive after samples tested through gene expert and x-rays was confirmed . This translates to about 21.4% which is generally high given that the samples were taken at random .

while conducting oral questions after screening at the triage center at Rhodes chest clinic Nairobi Kenya in the second week of January 2023, 15 out of 80 respondents who tested positive live in slum areas 645 patients tested for TB in Rhodes chest clinic in the month of January 2023 , 65 patients were positive confirmed cases . Out of the 65 who were positive 60 were slums dwellers . And their sample test was done through gene expert and x-rays

Conclusion

Following the data provided, there is a strong relationship between overcrowding and the spread of TB. Its evident that most of the TB cases occur among people who live in slums areas which are overcrowded .

Automation of active TB case finding in Electronic Medical Record in increasing TB case identification in Matata hospital, Homabay County

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Introduction

80% of those who seek care with symptoms of TB are not usually diagnosed at initial contact within the health facility (prev. survey 2016). Additionally, 42% of people with respiratory symptoms initially seek care at private clinics, laboratories and retail chemists (PPA, 2016). TB diagnosis is made after 4 – 5 hospital visits (many times a patient has visited a local nearby private facility and other public health facilities several times before the diagnosis is made, mostly at a public health facility). Homabay County is a high burdened TB zone. The county notified 1989 and 2155 new TB cases in the year 2020 and 2021 respectively (TIBU), However Matata hospital notified 40 cases (67%) TB cases in the year 2020. We sought to assess the impact of the automation of TB screening questions in the electronic medical record (EMR) in the outpatient department.

Methods

This was a retrospective analysis of 6 months of ACF data from July to December 2020, comparing the facility's Outpatient workload and the number screened for TB. Non standardized way of screening was used before automation of ACF questions in the electronic medical record in the OPD. The Clinicians still skipped the process sending patients to the pharmacy without first screening them for TB. Restrictions were done to make TB screening mandatory.

Capacity building was done to facility staff through CMEs and OJTs on the TB module. For symptomatic patients, EMR prompted request for Gene Xpert and AFBs Microscopy automatically to the laboratory which improved identification and linkage towards TB diagnosis and treatment.

Results

There was a 117% (70/60) ACF achievement in 2021 compared to 67 % (40/60) in 2020 . Across all the month the increment was significant with January 2021 when the intervention was introduced, reporting the highest increment (From zero to 7 TB cases)

Conclusion

Automation and making ACF questions a mandatory module in the EMR leads to increased case notification and therefore reduce public health burden of TB in facilities using EMR. Supportive system contributes to the success of implementation of Active Case Finding.

Sputum quality as a predictor of bacteriologically-confirmed TB by smear and culture in Nairobi county

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Introduction

Globally tuberculosis (TB) is a major public health problem and among the leading causes of death from a single infectious pathogen. The quality of sputum sample is an important factor in the diagnosis of TB through smear and culture. This study aimed to investigate whether sputum quality, defined as mucoid, salivary, or mucosalivary, could predict the yield of bacteriologically-confirmed TB by smear and culture in Nairobi County, Kenya.

Methods

This cross-sectional study included 440 TB participants recruited from three health facilities in Nairobi County; Mbagathi hospital, Rhodes TB clinic and AIDs Health Foundation-Mathare. Sputum samples from consented participants were collected. The sputum quality was recorded, ZN microscopy and Lowenstein Jansen culture were performed to determine the presence of Mycobacterium tuberculosis.

Results

Of the 440 243(55.22%) were mucoid with 176(72.42%) ZN positive and 67(27.57%) ZN negative; 173(71.19%) were culture positive and 70/243(28.81%)culture negative. 144(32.72%) were muco-salivary with 102/144(70.83%) ZN positive and 42(29.17%) ZN negative; 90(62.50%)culture positive and 54(37.50%) culture negative. Salivary samples were 51(11.56%) with 28(54.90%) ZN positive, 23(45.10%) ZN negative; 30(58.82%)culture positive,21(41.18%) culture Negative. Pearson chi2 (2) = 6.2456; p=0.044

Conclusion

The study findings suggest that the quality of sputum samples is a predictor of the yield of bacteriologically-confirmed TB, both by smear and culture. Therefore, it is important to ensure that sputum samples are of good quality, and efforts should be made to collect and process mucoid and muco-salivary sputum samples whenever possible. This can be achieved through the implementation of proper sputum collection techniques and training of healthcare workers on sputum collection and handling.

“We have a human right to breath fresh air”: Health inequalities and the Social Determinants of Asthma

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Introduction

Is there anything more fundamental to life than the function of breathing fresh air? This is a pertinent question as we are reminded by Rosamund Adoo Kissi-Debrah the mother of 9-year-old Ella Kissi-Debrah, a black girl who died from Asthma having lived 25 metres from a busy London road. Ella's death was the first to be attributed to air pollution in the UK. Asthma is therefore part of a metaphor for the 'right to health/life' – determining at times, who lives healthily and who dies. Its diverse and complex patterning of risks across the globe follows footprints of class, race, region, education, and gender, amongst other social factors. Existing data suggest that there are 300 million people living with asthma globally: a number which has increased by 50% over each passing decade. This is an important challenge for respiratory health in Africa, but one to which the answers are far from simple.

Methods

This presentation, informed by 'rights-based' approaches, will critically review the evidence with a subsequent discussion around how the Social Determinants of Health (SDH) can influence experiences of living with asthma and accessing health care including a diagnosis. According to the WHO, SDH are “the non-medical factors that influence health outcomes.” These include conditions in which people are born, grow, live, and age and the wider forces such as globalisation, systems, policies, laws, norms, and politics.

Results

Whilst there is diversity of risks globally, in sub-Saharan Africa, factors contributing to the development of asthma include household air pollution from solid fuel use, traffic and industrial pollution exposures, and prenatal maternal nutrition. Reported rates of asthma are high in higher income countries with recent increases noted in low- and middle-income country settings where paucity of data often masks the true extent of suffering. Inequities in access to asthma diagnosis and management are thus another area where wider determinants of health – including wider health systems factors as well as social, political, and economic factors – shape individuals' experiences of asthma.

Conclusion

The presentation contributes to ongoing debates on how the Social Determinants of Health affect children's chances of developing asthma, and the health of those living with the illness. Multi-sectoral approaches are required to tackle these complex challenges, and we discuss how those in leadership positions in various contexts may act as resources for social change, advocacy, and education, equipping us all to meet this global challenge.

Using creative activities to sensitise communities in Nairobi to lung health and air pollution research

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Introduction

Air pollution is a global health priority. It reduces life expectancy and increases risk of respiratory and cardiovascular disease. In Kenya, people living in informal settlements experience greater air pollution exposure than those living in more affluent areas. Sources include industrial emissions, waste burning and cooking. This project aimed to develop creative sensitisation activities to support recruitment to the Tupumue ('let's breathe' in Kiswahili) study, which compared lung health and air pollution exposure among school children in two communities in Nairobi.

Methods

The project took place in a large informal settlement (Mukuru) and a neighbouring more affluent area (Buruburu). Researchers and arts practitioners worked with 27 community artists and local residents (Tupumue champions) in two co-creation workshops in December 2019 and February 2020 to develop inclusive, culturally-relevant creative sensitisation activities. These were delivered in schools and community locations by the champions from February 2020 to August 2021. The champions were also trained in data collection (observation fieldnotes/photographs, interviewing) to assess attendees' engagement and learning.

Results

The sensitisation activities included street games, a music video and visual arts illustrating different aspects of lung health, and a puppet show, dramatizing Tupumue data collection to address any uncertainties about the study. The activities were initially delivered in eight of the 14 Tupumue fieldwork schools and 28 community settings. Following a COVID-enforced suspension (April-December 2020), the champions installed 10 large-scale, stencilled murals near the schools. From April 2021, smaller teams (5-8 champions) resumed delivery of adapted COVID-compliant sensitisation activities to 1552 pupils in 33 classes at the remaining six schools. Observations suggested most children were highly engaged in the activities. Many of the 24 pupils interviewed said they knew more about lung health, and most wanted to take part in Tupumue. However, interviews with 36 adults and children about the murals demonstrated mixed understanding of the messaging.

Conclusion

The sensitisation campaign was highly successful. It supported recruitment of 2403 children to the Tupumue study (Mukuru N=1296; Buruburu N=1107). The champions gained new skills in designing, delivering and evaluating creative sensitisation activities, and have established a community-based organisation (ZICO) to support future work in this area.

Sputum Culture Conversion rates in relation to HIV status after 6 months of Tuberculosis treatment in Nairobi Kenya

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Introduction

In 2021, 10.6 million people fell ill with Tuberculosis (TB) worldwide, an increase of 4.5% from 10.1 million in 2020. Decreased reported new TB cases in 2020 and 2021 indicate that the number of people with undiagnosed and untreated TB has increased mainly because of TB services disruptions caused by the COVID-19 pandemic. TB diagnosis involves clinical evaluation, including chest radiography and bacteriological tests. Bacteriological diagnosis depends on smear microscopic examination and bacterial cultures, which has been the traditional method for many decades. Lowenstein–Jensen (LJ) based myco-bacteriological culture and recently introduced TB molecular diagnostic technique with efficient turnaround time and specificity is also used for the diagnosis of active TB in clinical settings. The objective of this study was to determine sputum culture conversion rates in relation to HIV status after the intensive phase of TB treatment.

Methods

A total of 289 sputum samples from positive TB cases from three health facilities in Nairobi; AIDS Healthcare Foundation, Rhodes TB clinic, and Mbagathi hospital were collected, processed, and cultured on Lowenstein Jensen for 12 weeks.

Results

Of the 289 TB patients, 231(79.9%) were HIV non-infected, and 58 (20.1%) were HIV infected. Of the 231 patients, 43(18.6%) had negative culture results, and 188(81.4%) had positive culture results at the baseline of TB treatment. Of the 188(81.4%) patients who had positive culture results, 184(97.9%) had negative culture results and 4(2.1%) had positive culture results on completion of TB treatment. Of the 58 patients, 16(27.6%) had negative culture results, and 42(72.4%) had positive culture results at the baseline of TB treatment. Of the 42 (72.4%) who had positive smear results, 39(92.9%) had negative culture results and 3(7.1%) had positive culture results on completion of TB treatment. The sputum culture conversion rate after the completion of TB treatment for HIV non-infected was 97.9% and 92.9% for the HIV-infected.

Conclusion

Sputum culture conversion is strongly influenced by adherence to TB treatment. Patients' demographics should be analyzed to support the above findings.

Malaria, COVID-19 and hyper-inflammation in a paediatric patient

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Introduction

Coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has been associated with an inflammatory condition in children, multi-system inflammatory syndrome in children (MIS-C). We describe a unique case of malaria and COVID-19 with persistent hyper-inflammation.

Methods

Descriptive case report.

Results

An 8 year old female was admitted with acute onset fever and gastrointestinal (GI) symptoms. On admission she was sick-looking and febrile. Saturating 99% on room air, tachypnoea of 34 breaths/minute, bronchial breath sounds bilaterally. Tachycardia at 114 beats/minute and hypotension 80/40mmhg. She had a tender hepatomegaly, 4cm below the right sub-costal margin and epigastric tenderness. The rest of the systemic exam was unremarkable. Her initial work-up showed: Mild iron deficiency, Thrombocytopenia, Malaria antigen positive and falciparum parasitemia of 100,000/ μ L, high C-reactive protein (CRP) - 163.27mg/L (0-10) and Pro-calcitonin (PCT) - 57.18ng/ml (0.0-0.05). deranged urea, creatinine and electrolytes, microscopic haematuria, low albumin 21.78g/L (35-50) and low Vitamin D -19ng/ml(30-100). She was managed initially in the intensive care unit (ICU). A renal ultrasound showed parenchymal disease and on Chest X-ray (CXR) Bilateral opacification, pneumonia/pneumonitis features that later progressed to a right pleural effusion and an enlarged left ventricular outline. She was transferred to the general ward on day 7. She still had febrile episodes, difficulty weaning off low flow oxygen and the CRP and PCT markers were high. Cardiac echo-cardiogram showed a small pericardial effusion, mild pulmonary hypertension with normal anatomy and function. She still had persistent features of pneumonia/pneumonitis on her CXR. A suspicion of COVID MIS-C was made. The sputum multi-plex test was negative for all antigens tested including SARS-CoV-2, COVID IgM and IgG test were positive, Ferritin-782.19ng/ml (7-84) and lactate dehydrogenase -(LDH)1332 (0-305) were high. A 3 day pulse dose of methylprednisolone was given with resolution of her symptoms. Results for auto-immune markers showed; low C3, C4 complement levels, Anti-nuclear antibodies (ANA) weakly positive, Anti-double stranded DNA antibodies (Anti-dsDNA) negative. On follow-up 2 weeks later she's progressing well with no residual symptoms, good exercise tolerance and normal renal function.

Conclusion

Respiratory and GI symptoms in an older child with hypotensive shock in a highly endemic malaria zone should warrant diagnostics for MIS-C.

Spirometry reference values for healthy children and adolescents in Tanzania

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Introduction

The interpretation of spirometry test results is usually based on comparisons of data measured in an individual with predicted values based on healthy subjects, preferably from the same population or area. However, these data are scarce in African countries, especially in children. We aimed to collect lung function data from healthy Tanzanian children and adolescents to establish spirometry reference values for this specific population.

Methods

This cross-sectional study enrolled 300 healthy children and adolescents aged 5 to 17 years in Mbeya, Tanzania. We collected demographics and behavioural information using structured questionnaire, and performed anthropometric measurements. Lung function test was assessed using a handheld spirometer (EasyOne@ndd Medical Technologies, Inc) with individual-use filtered one-way single-use mouthpieces. The predictive Tanzanian equations for FVC, FEV1 and FVC/FEV1 ratio were constructed by using different regression models and correlation coefficients for the spirometry parameters with age, height and weight computed for each sex

Results

Out of the 300 participants who were enrolled, 285 produced valid spirometry results according to the American Thoracic Society (ATS)/ European Respiratory Society (ERS) acceptability criteria. In those who produced valid results, 143 (50.1%) were females and the mean age was 12.5 (SD 2.2) years. The Mean FVC and FEV1 were 2.3L (0.6) and 2.0L (0.5) respectively. Height was covariate for the prediction of FVC in both males and females, while the influence of age differed by sex for FEV1.

Conclusion

This study provides first data on lung function in healthy Tanzanian children and adolescents. The analysis and comparison of the obtained equations with GLI and references obtained from other African populations are currently ongoing. The pending analysis will reveal the applicability of the GLI equation in our setting.

Assessment of the effect of Computer Aided Detection (CAD4TB) enabled chest x-ray (CXR) on screening for Tuberculosis cases in Mathare North Health Centre

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Introduction

With over 95% tuberculosis (TB) cases and deaths occurring in developing countries, there is need for substantially improved case detection to find the “missing millions” and accelerate action to achieve the sustainable development goals to end TB by 2030. CXR with CAD software for TB has been recommended for systematic screening for TB disease in the most recent WHO TB Screening Guidelines. In 2021, 10.6 million people were presumed to have TB globally with only 6.4 million being diagnosed with TB in the same year. In the same period, Kenya reported 77,854 drug-sensitive TB (DSTB) cases, indicating a case detection gap of 48%. Following the WHO 2021 guidance on systematic screening for TB with CAD software enabled digital chest X-rays (DCXR), Kenya rolled out these new technologies in eight facilities. We set out to evaluate the outcome of CAD- DCXR TB screening on patients seeking care in Mathare North Health Centre, Nairobi County.

Methods

This was a cross-sectional screening of all eligible patients above 15 years of age between September 2022 and January 2023. patients were screened using a Delft Light portable digital X-ray with Computer Aided Detection Software (CAD4TB) version 7. It gave a probabilistic score for TB ranging from 0 (low probability) to 99 (high probability). GeneXpert MTB/RIF Ultra was used for bacteriologic confirmation of results above set threshold. Bacteriological negative results were clinically evaluated and this aided in clinical diagnosis.

Results

1025 were screened for TB using CAD4TB v7 enabled DCXR. OPD and CCC clients screened were 345 (33.7%) and 676 (66.0%) of whom, majority were females (63.6%). CAD scores >60 for and 40-59 was 50(14.4%) and 31(9%). Out of those who scored >60, 46 (92%) received bacteriological testing, 23 (46%) were positive while 12 (24 %) were clinically diagnosed. CAD scores of >60 and 40-59 for HIV positive patients were 23 (3.4%) and 30 (4.4%) respectively. Out of those who scored >60, 22(73%) received bacteriological testing. 2(6.6%) were positive while 2 (6.6%) were clinically diagnosed.

Conclusion

Our findings demonstrate CAD-DCXR as a useful TB screening tool for all clients in our setting

Rare cause of Bilateral Vocal Cord Paralysis and Diaphragm Dysfunction

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Introduction

Bilateral Vocal Cord Paralysis (BVCP) is a differential diagnosis of congenital stridor. The cause of congenital BVCP is usually idiopathic, due to associated neurological abnormalities or chromosomal abnormalities.

Methods

We present a case of a term neonate with respiratory distress at birth and biphasic stridor.

Results

The neonate had respiratory distress from birth requiring CPAP. From day 3 of life noted to have desaturations on feeding, increased work of breathing, biphasic stridor and unable to wean off CPAP. He was transferred for assessment on D14 of life. He had no dysmorphic features, but stridor and paradoxical breathing pattern was noted, with respiratory acidosis and a raised lactate. Echo revealed biventricular hypertrophy without outflow obstruction and normal ECG. Bedside ultrasound of the diaphragm confirmed bilateral palsy. Bronchoscopy showed reduced movement of the larynx and no movement of the vocal cords during spontaneous respiration. Child required tracheostomy for prolonged ventilation. CT Brain was done which was normal, myopathy excluded clinically with a normal CK.

Noted to have persistently raised lactate, metabolic investigations showed a serum lactate pyruvate ratio of 69.23 (7 times the upper limit of normal). MRI of the brain and spine showed diffuse abnormal signal of the hemispheric subcortical and deep white matter without any basal ganglia or brainstem abnormality. There was cervical myelopathy with expansion of the cervical central spinal canal. Features in keeping with a leukoencephalopathy or mitochondrial cytopathy. Muscle biopsy showed features suggestive of a mitochondrial abnormality. Mitochondrial DNA sequencing results to follow. The patient is currently on home ventilation awaiting a feeding gastrostomy.

Conclusion

Metabolic disorders should also be considered in the workup for congenital vocal cord paralysis, with mitochondrial disorders a rare but important diagnosis.

Improving TB case finding through strengthening the use of Chest X-rays as a TB screening tool for presumptive cases. A case of Kamiti prison hospital, Nairobi

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Kenya Prisons⁴

Introduction

The Kenya national prevalence survey 2016 showed that Kenya's tuberculosis (TB) burden is 426 per 100,000, previously estimated by WHO at 233 per 100,000. It further showed that a chest x-ray (CXR) was a vital screening tool for tuberculosis. During the survey, 88% of cases diagnosed had abnormal chest x-rays, and 52% did not have a cough for more than two weeks. Prisoners are a high-risk group for TB disease; Kamiti prison hospital is one of the four prison facilities in Nairobi serving the inmates and the community. In 2020, TB case finding at Kamiti dropped by 67% to 46 notified patients from 141 in 2019. We aimed to improve case finding through the use of chest X-rays as a screening tool in Kamiti prison

Methods

We retrospectively reviewed data from TB4 and the presumptive registers reported in January to December 2021. The presumptive TB cases that were identified were through symptom screening. CXR was further used for triaging a proportion of presumptive cases before subjecting the clients with suggestive CXRs to gene expert for further analysis.

Results

In 2021, there were 435 persons presumed to have TB, 284 (65%) had CXR done. Eighteen percent of those with CXR had abnormal CXRs, and 27 (52%) were bacteriologically positive by GeneXpert. Further 25 (25%) were clinically diagnosed using symptom and the chest x-ray only. Out of the 151 without CXR, 40 (26%) yielded a positive result on Xpert.

Conclusion

This study demonstrates the importance of CXR as a triaging tool with high yield from Xpert for those triaged with CXR, 52% versus 26%. This could potentially lead to savings on number of Xpert tests needed to diagnose one bacteriologically positive TB case. An increase in clinical diagnosis was also noted with all with abnormal CXR and negative Xpert put on treatment. Use of CXR in triaging has a potential for TB over diagnosis and caution should be applied with clinical team discussions before making a decision to start treatment.

Surveillance of Common Respiratory Viruses in Senegal During the Covid-19 Pandemic: Focus on Respiratory Syncytial Virus (RSV)

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Introduction

In many countries, different public health measures have been implemented during the COVID-19 pandemic to counter the transmission of SARS-CoV-2. These measures, in particular physical distancing and the use of masks, might have contributed to containing the circulation of other respiratory viruses, including RSV. However, similar data in tropical and resource-limited countries are limited. So here, we investigated the epidemiology and seasonality of RSV infection to determine the possible impact of such interventions in reducing the spread of Respiratory Syncytial Virus (RSV).

Methods

From January 2020 to December 2021, nasopharyngeal and throat swab samples are collected from consenting patients with ILI or SARI presenting to the various healthcare sentinel sites across the country. An enrollment form is used to collect data from enrolled eligible patients including patient demographics, medical history, clinical signs and symptoms, comorbidities, recent travel history, treatment, clinical course, and outcome. Respiratory samples are tested for RSV and other respiratory pathogens using RT-qPCR.

Results

During the study period, 4160 samples were received of which 3728 (89.6 %) ILI cases and 432 (10.4 %) SARI cases, and the most frequently observed symptoms were cough (92.4%) and fever (68.9%). Children \leq 5 years accounted for 35.6 % (1483/4160) of all participants, whereas the elderly patients represented 16.5 % (688/4160). RSV was detected in 224 (5.4 %) cases with 28 (12.5 %) found in co-infection with at least one another respiratory virus. The most common co-infecting viruses were with influenza viruses (11.6%; 26/224), rhinoviruses (11.2%; 25/224), adenovirus (4 %; 9/224) and SARS-COV2 (3.6 %; 8/224). RSV infection were more identified in SARI (10.6 %; 46/432) compared to ILI (4.8 %; 178/3728) patients. RSV detection rates in the different age groups varied significantly with children under 5 years group accounting for 68.3% (153/224) of positive patients. Globally, we observed a shift in the seasonality of RSV during the Covid-19 pandemic (systematic increase in RSV infections between September-November each year), which usually circulates during the rainy season (June-September).

Conclusion

Overall, results obtained in this study suggest that the spread of the pandemic SARS-CoV-2 virus has significantly affected the temporal trend of RSV in Senegal, highlighting that the detection of other common respiratory pathogen(s) should not be ignored during the COVID-19 pandemic.

Time to appropriate care-seeking for Covid – 19 symptoms

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Introduction

in sub-Saharan Africa, the symptoms of covid-19 are similar to those of several pathologies frequently encountered in this region, which can confuse the diagnosis both for the patient and for health structures with limited resources. We studied self-reported time to care-seeking from the onset of covid-19 symptoms

Methods

This was a cross-sectional study. Patient files who attended at the medical emergencies Unit of Brazzaville University Hospital, for symptoms suggestive of Covid - 19 between May 2020 and February 2022, were collected. The diagnosis of Covid-19 was confirmed by RT-PCR or antigen test. Delay, between the rise of Covid- 19 symptoms and the attendance at the medical emergencies Unit, was recovered from the history of the disease reported by the patients themselves, and a certain consistency was observed. When the patient had reported duration of 'about one week' in the delay we noted '7 days' and 'about 2 weeks' corresponded to '14 days' taking this into account we used the Weibull regression model accelerated failure-time metric to identify potential risk factors which were subsequently presented as a time ratio (TR).

Results

102 patients were included, 57 (55.88%) were women, the median age was 64 years (Interquartile Range (IQR): 56 – 71), history of hypertension and diabetes was found respectively in 51 (50%) and 27 (26.47%) patients. 13 (12.75%) were vaccinated against Covid – 19. The median time to care-seeking was 7 days (IQR: 5 – 7). Being vaccinated (adjusted Time Ratio (aTR): 1.69 (95% CI: 1.09 – 2.6) p=0.02) and having a cough (aTR: 1.74 (95% CI: 1.2 – 2.52) p=0.03) was associated with a longer time to care-seeking. On the other hand, being Hypertensive (aTR: 0.68 (95% CI: 0.51 – 0.9) p= 0.006), asthenic (aTR: 0.46 (95% CI: 0.23 – 0.91) p= 0.03) and having respiratory distress (aTR: 0.48 (95% CI: 0.26 – 0.89) p=0.03) were associated with a faster time to care-seeking.

Conclusion

vaccine increases time to care seeking, especially when it is associated with the classic signs of COVID-19 such as cough. To limit the under-notification of cases in sub-Saharan Africa, Covid 19 testing must be generalized

Profile and factors associated with survival of patients that received physiotherapy during admission in the intensive care unit (ICU) in Kano, Nigeria

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Introduction

The intensive care unit (ICU) is a specially equipped ward where critically ill patients are admitted for close monitoring and special care in order to increase their chances of survival. Mortality rate in ICUs are high and are influenced by several factors. The objective of this study was to report the profile and factors associated with survival of ICU patients who received physiotherapy in a Nigerian tertiary hospital.

Methods

A 5-year retrospective survey of patients admitted between January 2016 and December 2020 in the ICU of Aminu Kano Teaching Hospital Kano, was conducted. An audit of the ICU register and patients' hospital files was conducted. Sociodemographic and clinical variables such as mechanical ventilation use, type physiotherapy interventions and status at discharge were recorded. Descriptive and inferential statistics was utilized in analyzing the data obtained using SPSS v24 software.

Results

A total of 191 cases were included after screening 397 patients' records. The mean age of the included cases was 39.7(SD=13.63) years, majority of whom were males (69.1%). The cause of admission was mainly surgical conditions following traumatic assault (68.1%). About 46.1% of the patients received mechanical ventilation, whilst 87.4% received a combination of exercise and chest physiotherapy techniques as part of their treatment interventions. The study also found that ICU related mortality rate was 39.7%. Following regression analyses, the results indicated that mechanical ventilation was a significant predictor of survival. Specifically, ICU patients that were not mechanically ventilated were 3.37 times more likely to survive compared to those that were ventilated (AOR=3.37, p value < 0.001).

Conclusion

It was concluded that among ICU patients amenable to physiotherapy, mortality rate is high, and administration of mechanical ventilation was the major determinant of ICU-related mortality.

Fortuitous Discovery of a Double Superior Vena Cava

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Introduction

In this Work , we presented adult patient who incidentally diagnosed with double Superior vena cava and a description of the clinical evolution and abnormalities found in the chest-Xray and Ct-imaging .

Methods

A case report of fortuitous discovery of A double vena cava in patient who were operated for an implanted venous chamber .

Results

Fortuitous discovery of a double superior vena cava on an implanted venous chamber performed on a lymphoma in a 65-year-old patient. the patient was operated before for a biopsy of a cervical adenopathy under local anaesthesia having revealed a lymphoma for which the patient was programmed for a chemotherapy. the thoracic radiography face immediately after surgery of Implanted venous chamber performed on Sub-clavien vein revealed that the catheter is parasternal left and the thoracic Tdm realized immediately revealed a double superior vena cava with a low localization of the catheter which required a withdrawal of 5 cm on a good caliber of the vena cava varied.

Conclusion

Duplication of superior vena cava is a rare anomaly. The incidence of double SVC in general population is 0.3% whereas in patients with congenital heart disease it varies between 10-11%. This abnormality can have clinical importance if especially the one on the left side drains into the left atrium.

Unusual Metastatic Sites for Lung Cancer: About 4 Cases

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Introduction

Lung cancer is a malignant tumor developed in depend of lung cells. Incrimination of smoking is never deny but genetic and professional exposure is also incriminated. Diagnosis confirmation is cytological. Liver, brain and bones represent the common metastatic localizations. Prognosis depends in time of diagnosis and treatment.

Methods

we report in our retrospective study all cases of unusual localizations of lung cancer metastasis seen in the surgery department of the Agadir regional hospital . 4 cases reported of cutaneous, scalp and ocular metastasis with histological evidence by surgery under local or general anesthesia.

All patients of our study are male, and the mean age is 43 years. The mean duration of symptoms was 2.5 months. Histological types were: adenocarcinoma 75% and epidermoid carcinoma in 25 %. 2 Patients had more than one metastasis (two different sites). There were cutaneous metastases in 1 case, scalp 1 case and ocular 2 cases. Metastasis had revealed lung cancer in 2 cases. The histological diagnosis of lung cancer was confirmed by local biopsy 1 case, ocular biopsy 1 case and after thoracoscopy 1 case. Chemotherapy was given in all cases . The median survival was 5years .

Results

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Conclusion

Lung cancer is one of the most frequent cancer. Stage is often advanced at the time of diagnosis . Metastasis is one important prognosis factor for lung cancer.

Role of Pulmonary Rehabilitation on the Health-Related Quality of Life in People affected with Post TB Lung Diseases in Tanzania

Dr Kassim Msaji¹

KIDH¹

Introduction

Post TB lung disease (PTLD) is a growing health problem accounting for over 40% in Tanzania and elsewhere. Yet, there is no clear programmatic intervention to address the problem. We assessed the role of Pulmonary-rehabilitation (PR) on the health-Related Quality of Life (HRQoL) in individuals with PTLD

Methods

This cohort study recruited and followed patients with PTLD who were participating in a community-based PR for 12 weeks. Patients received community-based PR intervention comprised of physical exercise and health education, with or without pharmacotherapy, which was done 4 times in a week.

Results

From October 2021 through March 2022, 85 PTLD patients were recruited including 58 (68%) who had valid baseline spirometry results. Of these 58 patients, 30 (52%) had abnormal spirometry results such as, restrictive (n = 6), obstructive (n = 10) and mixed (n = 14). In total, 19 (22%) of 85 PTLD patients completed 12 weeks follow up of community pulmonary rehabilitation (n = 15) alone and pharmacotherapy (n = 4). The mean (SD) STGRQ score significantly decreased from 46.2 (19.7) at baseline to 18.4 (11.1) at week 12 (p <0.001) whereas the median (Interquartile range; IQR) mMRC dyspnea scale improved from 1 (1 – 2) at baseline to 1 (0 – 1) at week 12 (p = 0.013).

Conclusion

Pulmonary rehabilitation with or without pharmacotherapy intervention improved the health-related quality of life, as measured by STGRQ and mMRC dyspnea scale.

Evaluating a mobile health tool to guide management of acute respiratory illnesses in young children in Uganda

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Introduction

Acute lower respiratory illnesses (ALRI) are a leading cause of death in young children. Despite evidence-based guidelines, ALRI case management remains challenging, and guideline adherence is low. We created ALRITE (Acute Lower Respiratory Illness Treatment Evaluation), a point-of-care, Integrated Management of Childhood Illnesses (IMCI)-based mobile health application to guide ALRI diagnosis/management in Uganda.

Methods

Pilot feasibility study following ALRITE deployment in two primary care Ugandan health centers. Medical doctors and clinical officers caring for children in the outpatient department were eligible to participate in the study. We conducted training on use of ALRITE and ALRI management and provided ALRITE-enabled tablets for clinicians to use during clinical consultations for three months. ALRITE use was not required, and clinicians were encouraged to override the ALRITE diagnosis if they disagreed. We collected ALRITE use data, clinical information, and implementation outcome measures (adoption, acceptability, and feasibility).

Results

All eligible clinicians (N=7) enrolled in the study. One month after enrollment, 5 were actively using ALRITE (adoption 63%); and by 6 weeks had dropped to 2 (28.6%). ALRITE was initiated for 159/1139 pediatric encounters; 4 encounters were not completed. Primary ALRITE diagnosis included 37(24%) severe pneumonia or very severe disease, 32(21%) pneumonia, 82(53%) cough/cold/no pneumonia, and 6(%) no signs of respiratory illness; ALRITE additionally diagnosed 4(3%) with wheezing illness. Algorithm errors included 1) no primary diagnosis (once); 2) multiple primary diagnoses (twice); 3) overdiagnosis of severe disease (twice). The concordance of the primary diagnosis between ALRITE and clinician was 70%. Forty percent of discordance occurred due to clinicians marking IMCI danger sign, likely inappropriately, in a child with less severe disease. Facilitators of ALRITE use included clinician stories of positive patient outcomes, clinicians' perception of improved guideline adherence, and ease of use. Barriers included usability, time constraints, knowledge gaps, and inadequate staffing.

Conclusion

We have demonstrated the feasibility of the ALRITE mobile health tool in Ugandan health centers. The next steps include addressing discordance and improving user experience and functionality by modifying ALRITE and implementation approach to address the barriers. Results will inform a larger trial evaluating ALRITE's impact on clinical care.

The influence of maternal allergy or atopy on child wheezing and lung function at two years in a South African birth cohort study

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Introduction

Knowledge on early life determinants of respiratory disease in children is important for directing interventions to strengthen lung health

Methods

Mother and child pairs enrolled in the Drakenstein Child Health Study, a South African birth cohort were followed from birth for 2 years for wheezing episodes and lung function measurements. Active surveillance for wheezing episodes and for lower respiratory tract illness (LRTI) was done. Recurrent wheeze was defined as x2 wheeze episodes. A subset of mothers had self-reported allergies and atopy blood tests (total IgE, phadiatop and ascaris IgE). Correlations were explored between maternal allergy or atopy with children's wheeze characteristics and lung function tests (tidal breathing, exhaled nitric oxide and multiple breath washout) in children at 6 weeks and annually.

Results

Amongst 1137 mothers and 1143 children enrolled, 611 (54%) mothers had allergy testing, median (IQR) age 25 years (21.8, 30.7); 201 (33%) mothers smoked, 113(18%) were living with HIV and 42 (7%) had self-reported allergy. 613 (54%) infants included: term-born (519, 85%), male (323, 53%), median (IQR) birth weight 3 (2.69, 3.42) kgs and one HIV infected infant (0.2%). 234/613 (38%) children had at x1 wheezing episode through 2 years, of whom 89(15%) had recurrent wheeze; there were 404 LRTI episodes in 209/613 (33%) children. Risk factors for recurrent wheezing included maternal asthma (OR 4.36; 95%CI 2.03,12.49; p<0.001) or previous LRTI (OR 2.12; 95%CI:0.44, 10.07; p<0.05). Children whose mothers had self-reported hay-fever had a higher FeNO (2.05ppb, 95% CI 0.03, 4.13, p=0.05). Males had higher tidal volume (4.36ml, 95% CI 3.05, 5.67; p = 0.01), higher FRC (11.53, 95% CI: 7.84, 15.23; p = 0.01), higher resistance (2.08, 95% CI: 0.59 - 3.56; p = 0.01), and 3% lower tPTEF/tE (0.97, 95% CI 0.93,1.00; p = 0.05). A positive phadiatop was associated with 6% change in tPTEF/tE (1.06, 95%CI 1.01, 1.11; p=0.03). Maternal total IgE and Ascaris sensitization had no effect on wheeze or lung function.

Conclusion

Maternal allergy and atopy influence childhood wheezing and impact healthy lung growth.

Integrating Quality Improvement to Increase Tuberculosis Active Case Finding in Giribe Dispensary

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Introduction

Giribe dispensary is a health facility in Migori county which began implementing active case finding (ACF) since 2019 which is the systematic identification of presumptive TB cases from a predetermined target group or population, while quality improvement is the formal approach to the analysis of practice performance and efforts to improve performance. The facility has catchment population of 10,188 with an expected annual target for notified TB cases at 43 cases per year which up to the end of 2021 had not been achieved. In January 2022 The facility formed a work improvement team and Using a fish bone the following root causes were identified knowledge gaps amongst clinicians on active case finding, poor contact management and weak community facility

Objectives

i. To increase TB case finding by 50% by December 2022.

Methodology

This is a retrospective study comparing data collected from the facility TB patient register and contact management from 2019 to 2021 before integrating quality improvement and 2022 after. The number of TB cases diagnosed was then analyzed.

Strategies employed were:

1. ACME to sensitize facility staffs on active case and contact management register.
2. Regular on job training and mentorship on screening and TB management.
3. Monthly tracking of indicators on the TB dash boards after QI meetings.
4. Sensitizing the community health volunteers on screening, contact tracing and community facility referrals of suspects.

Results

In 2019 when the facility began implementing active case finding only 12 cases of TB were notified and in 2020 decreased to 8 (25%) cases, in 2021 8 cases. In 2022 with the above strategies following integrating quality improvement in active case finding the facility notified 39 (488%) cases.

It was only in 2022 3 (7.7 %) TB cases were diagnosed from referral from the community who were all pediatrics due to improved contact management

Conclusion

Integrating quality improvement in active case finding aids in identifying problems, solutions and tracking down progress essential in scaling up number of TB cases diagnosed

Treatment intervention strategies for asthma and chronic obstructive pulmonary disease in Malawi – economic evaluation based on a five-year population cohort

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Introduction

Asthma and chronic obstructive pulmonary disease (COPD) are the most common chronic respiratory diseases. 90% of the deaths from COPD are in populations living in low- and middle- income settings (LMICs). This study evaluates the long-term costs and effects of possible interventions in Malawi and usefulness in similar settings

Methods

A six-stage Markov model having four mutually exclusive disease states for patients with asthma or COPD in addition to a death state, and a healthy general population state was developed to conduct a cost-effectiveness analysis over a patient's lifetime. Patients entered the model at the age of 35 from the general population state. We evaluated the use of anticipatory 'emergency packs' of antibiotics and corticosteroids at home for COPD and inhaled beclomethasone and salbutamol for asthma. Estimation of stage-specific probabilities, utilities and costs was based on Malawian cohort studies and lifetables. A discount rate of 3% was applied to costs. Probabilistic sensitivity analysis was used.

Results

The COPD intervention dominated usual care in the people with mild COPD while the incremental cost effectiveness ratios (ICERs) were US\$ 72, US\$ 102, and US\$ 242 in people with mild asthma, moderate/severe asthma, and moderate/severe COPD respectively. The asthma intervention resulted in a life-years gain of 1.62 years and 1.29 years in the patients with mild asthma and moderate/severe asthma respectively while the COPD intervention resulted in a life-years gain of 3.49 years and 3.90 years in patients with mild COPD and moderate/severe COPD respectively. Uncertainty primarily originated from data on treatment cost especially in people with moderate/severe COPD.

Conclusion

The COPD intervention was dominant in people with mild COPD while the in the people with moderate/severe COPD and people with asthma the ICER ranged from US\$ 72 to US\$ 241. The COPD intervention resulted in larger life expectancy gains compared to the asthma intervention. In the univariate sensitivity analyses, the cost of managing moderate/severe COPD had the highest impact on the uncertainty in the model. This study describes the structure of an asthma and COPD dynamic prevalence model that accounts for disease natural occurrence and history until death with input parameters drawn cohort studies conducted in Malawi.

Challenges of unsupervised sputum samples collection for Mycobacterium tuberculosis analysis

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Introduction

In the wake of the COVID -19 pandemic, tuberculosis (TB) is the second leading cause of death from an infectious disease worldwide. Kenya listed 30th among the high burden TB states, despite the effort made by the government on early diagnosis and treatment. WHO recommends collection of two sputum samples for tuberculosis (TB) diagnosis, with one being a morning sputum sample (MS) collected at home without supervision while spot samples (SS) are collected at site under supervision of a well-trained personnel. Quality of sputum produced can influence the processing of the samples and results reported by laboratory personnel. This study aims to assess the challenges limiting efficiency and effectiveness of unsupervised early morning sputum sample collection.

Methods

A cluster-based cross-section study was conducted between April 2022 to December 2022 in Nairobi County. Spot sputum sample from community-based TB suspects were collected at the mobile field sites (MFS) by well trained personnel. The participants were provided with sputum containers for unsupervised early morning sputum sample collection.

Results

The common challenges encountered in the unsupervised morning sample collection were; no turnout of participants in delivering morning samples to the MFS site due to family or work commitments, sub-standard sputum quality (poor cough technique and eating prior to production) that increased contamination rates, inadequate sample quantity collected, Sample rejections due to false information by participants (due to stigma), untimely return of the morning samples influenced by the nature of occupation of the participants and improper storage and transportation conditions from participants' homes to the MFS.

Conclusion

Spot samples collected at site under supervision yielded high turnout and were of good quality compared to morning samples collected at home without supervision. Introduction of a tracking log sheet helped in tracing and reminding the participants about the time of sample collection and delivery. Supervision is key for efficient and reliable sputum sample collection in diagnosis of TB. Future studies can consider having participants have well trained community health volunteers (CHVs) supervise the sputum production to reduce contamination rates to promote high sputum quality.

Assessment Of Lung Function And Oxygen Saturation In Children With Sickle Cell Anaemia At Alex Ekwueme Federal University Teaching Hospital, Abakaliki, Ebonyi State, Nigeria

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Introduction

Pulmonary complications of sickle cell anaemia (SCA) start early in childhood and translate into adult chronic lung disease. Routine assessment and monitoring of lung function are important to optimize lung health in sufferers. We aimed to assess the lung function values measured by spirometry, and oxygen saturation measured with a pulse oximeter in children with SCA and to compare them with those of children without SCA.

Methods

This was a comparative cross-sectional study of children with SCA aged 6 to 18 years old attending clinics at the Sickle Cell Institute of a tertiary health facility in Abakaliki, and children without SCA (HbAA) matched for age and sex drawn from public (government-owned) schools from June 2021 to December 2021. We measured the forced expiratory volume in one second (FEV1), forced vital capacity (FVC), FEV1/FVC ratio, and peak expiratory flow rate (PEFR) using SCHILLER SPIROVIT; and oxygen saturation (SpO2) with a portable pulse oximeter. Mean FEV1, FVC, FEV1/FVC, and SpO2 were compared between groups (SCA and non-SCA) using the Student's t-test; and across age groups using the Analysis of Variance (ANOVA). The relationship between the SpO2 and lung function parameters was tested using Pearson's correlation.

Results

In all, 262 children (131 with SCA and 131 without SCA (HbAA)) were enrolled. The mean (SD) FEV1 (1.72 ± 0.54 litres), FVC (1.94 ± 0.63 litres), and PEFR (259.63 ± 92.67 L/Min) in children with SCA were significantly lower than those without SCA (2.68 ± 0.75 litres), (2.52 ± 0.83 litres) and (329.80 ± 105.94 L/Min) respectively; $p < 0.001$. Their mean FEV1/FVC was not significantly different. Restrictive impairment was predominant in both groups (SCA 38.93% and non-SCA (10.8%). Only 4.2% of children with SCA and 1.6% of those without SCA had obstructive impairment. None of the participants had mixed abnormalities. Oxygen saturation (SpO2) was comparable in both groups. No significant correlation was observed between SpO2 and spirometric parameters.

Conclusion

Conclusions: Sickle cell anaemia is associated with poor lung function. Lung function impairment did not impact significantly the oxygen saturation during a steady state. Optimization of lung health in affected children is advocated to forestall the progression to chronic lung disease in future

Scaling up Tb case finding by use of presumptive Tb register – a case in Tisinye health centre, Migori county

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Introduction

Tuberculosis (TB) is a communicable disease that is a major cause of ill health and one of the leading causes of death worldwide. Approximately 10million people developed tuberculosis globally in 2020 (WHO TB Global report 2021). Case identification of clients with TB infections through the use presumptive registers in screening all RTIs is a key intervention as a primary model of breaking the community transmission chain hence useful in the eradication of the disease. Through an effective and efficient presumptive screening approach, Tisinye health Centre realized the highest number of bacteriologically confirmed cases in one month.

Methods

Analytical screening approach; by the use of presumptive register was done, with skills gained in a training supported by CHS TB ARC II project. RTI patients who presented at Tisinye health centre OPD department were line listed on the presumptive register and subjected to smear tests and 12 patients were confirmed with TB in that month.

Results

The facility was able to identify 12 TB cases through presumptive register screening. This intervention made the facility improve on its TB case identification from 2 in July to 12 in August 2022. The highest number ever achieved

Conclusion

An effective and efficient use of presumptive registers approach has a big potential in bridging the TB cases identification gap.

Impact of computer aided detection (CAD4tb) chest x-ray on TB case detection among people living with HIV (PLHIV) in Madiany Hospital

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Introduction

Tuberculosis (TB) is currently second to COVID-19 as a leading cause of death from a single infectious agent, claiming a life every 22 seconds. Globally, TB caused 187 000 deaths among PLHIV in 2021. Kenya's TB-HIV co-infection rate was 24% in 2021. PLHIV are 18 times more likely to develop TB disease compared to those without the virus. TB screening was carried out at every clinical encounter. Following the WHO 2021 guidance on systematic screening for TB with computer aided detection (CAD) software enabled digital chest X-rays (DCXR), Kenya rolled out these new technologies in eight facilities. We set out to evaluate the outcome of CAD-DXCR TB screening among PLHIVs on care at Madiany Hospital, Siaya County.

Methods

This was a cross-sectional prospective screening of all eligible clients >15 years of age booked for routine HIV clinic visits between July 2022 and January 2023. Clients were screened using a Delft Light portable digital X-ray with Computer Aided Detection Software (CAD4TB) version 7. CAD4TBv7 gave a probabilistic score for pulmonary TB ranging from 0 (low probability) to 99 (high probability). Bacteriologic confirmation for above the set threshold score was by use of GeneXpert MTB/RIF Ultra and in some instances by microscopy. Clinical Officer CXR interpretation and clinical evaluation of patients aided in clinical diagnosis of bacteriological negative results. Clients <15 years of age, those currently on TB treatment, pregnant and those who declined were excluded from CXR screening.

Results

920 eligible clients were screened for TB using CAD4TB v7 enabled DCXR. Out of these, 346(37.6%) were males with a median age of 45 (IQR: 36,54). These clients had a median period of 9 years IQR (6,12) on ART. The average CAD score was 5 (IQR: 3,12). The CAD scores 40-59 and >60 was 2.8% and 4.2%. Out of those with CAD score >60 (N=39), 35(90%) received bacteriological testing and 25(64.1%) were positive. Clinical diagnosis was 14. Males were at a 22% higher risk of TB-HIV co-infection compared to females (RR=1.22; 95% CI, 0.70-2.12).

Conclusion

Regression analysis showed that PLHIVs with CAD scores >60 were 16 times more likely to have TB as compared with those with scores <40.

Optimization of smear microscopy to enhance afb detection. A case study of Tisinye health centre. Migori County.

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Introduction

Sputum microscopy has been the primary method of diagnosis of pulmonary TB in low and middle income countries as well as a method of choice for treatment following up for both bacteriologically and molecular confirmed cases due to its simplicity and cost effectiveness. However its sensitivity is compromised in cases of low bacterial load. Large number of samples for microscopy sometimes do contribute to the low sensitivity of the test. Therefore a need to optimize smear microscopy to enable more cases detection in peripheral facilities with limited resources and enhance TB treatment following up as well.

Methods

The convectional AFB staining technique involves heating the underside of sputum smear flooded with cold ZN stain. This time long technique has been used for a long time. However in a case of many slides insufficient heating of the smears do occur. To avoid this A pre-heated hot ZN stain is flooded on the smears thereby eliminating the need to heat the smears to enhance staining. This is done by heating the working ZN Stain till it boils before being used.

Results

After using this method of enhancement of stain by heating, the Laboratory was able to achieve a the highest number of bacteriologically confirmed cases ever achieved in a single month totaling to 12 cases equivalent to 300% of its target on the month of August 2022.

Conclusion

If embraced and adopted, the use of boiled carbol futchin stain can be a game changer that may see ZN become a universally accessible test that can potentially save thousand of lives globally from TB death.

Indoor air pollution, knowledge of sources and Respiratory Symptoms among Women in Kano State

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Introduction

Indoor air pollution (IAP) in many households occurs due to the burning of solid fuels used for meal preparations. It has been identified to be one of the ten most important risk factors for the global burden of disease. There are growing indications that indoor air pollution resulting from using biomass fuel for cooking is a major threat that seriously affects both children and the elderly alike. This study assessed air pollution and investigated the knowledge of sources of air pollution and respiratory symptoms among women in Kano.

Methods

One hundred and thirty-three mothers were recruited in a cross-sectional study. Purposive sampling was used to recruit participants. Knowledge of sources of indoor air pollution and respiratory symptoms was assessed using a structured questionnaire. Air pollution was measured using air quality meter. Data obtained was summarized using frequency and percentages, statistical package for Social Sciences (SPSS) version 20

Results

The mean age of mothers was 33 years. The majority have secondary school education (56.4%), cooking fuel predominantly used was charcoal (47.4%), a combination of kerosene, firewood, and charcoal (18.0%), firewood alone (13%), and the least is kerosene alone (2%). The majority of them cook between 3-4 hrs per day. PM_{2.5} reported within the hazardous was 25.6%, pollution from CO₂ (39.8%), and TVO₂ (51.1%). The humidity level was low in all cooking areas. Sources of knowledge of air pollution are mosquito coil (88.7%), firewood (86.5%), cigarette smoke (85%), and charcoal (81.2%) constitute major sources. Symptoms commonly reported was cough (36.8%), phlegm (66.7%), shortness of breath (44.7%)

Conclusion

Air pollution is present, participants have knowledge of sources and respiratory symptoms are present among the women

Pattern, correlates of respiratory symptoms and Lung function among Shisha Smokers in Kano, Nigeria

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Introduction

Water-form tobacco smoking (Shisha) has increased among youth in the last several years, despite evidence that it has similar or even worse health effects. It may be partially due to the misconception that waterpipe smoking (WPS) is safer than cigarette smoking. This study determined the pattern and correlates of respiratory symptoms and lung function among shisha smokers

Methods

This study is a cross-sectional study. One Hundred and Thirty Five participants who smoke shisha are recruited. 111(82.2%) were males and 24(17.8%) were females. They were recruited from various shisha joints in Kano using convenient sampling. Respiratory symptoms were assessed using a respiratory symptoms questionnaire (ATS-DLD-78), portable spirometer (MSO4) was used to assess lung function. Data were summarized using frequency and percentage and inferential statistics of Correlation were used to test the relationships, with alpha level $P < 0.05$.

Results

The majority are single youth (99.3%), and the mean age is 23.21 years. Respiratory symptoms reported during active hours were Phlegm (38.5%), shortness of breath(30.4%), wheezes(26.7%), and cough(17.8%). A moderate positive correlation existed between wheezes and FEV1 ($r = .383$; $p = .000$) and a weak positive correlation between cough with phlegm ($r = .229$; $p = .008$) and breathlessness with FEV1 ($r = .175$; $p = .042$). A weak negative correlation was noted between wheezes ($r = .150$; $p = .083$), phlegm production with chest illness ($r = .217$; $p = .012$), and FEV1. Also, a weak positive correlation between wheezes occasionally apart from cold ($r = .299$; $p = .000$), breathlessness ($r = .191$; $p = .026$), and FVC, while a weak negative correlation between phlegm production ($r = -.172$; $p = .045$), cough ($r = -.180$; $p = .037$), wheezes with cold ($r = -.207$; $p = .016$) and FVC.

Conclusion

The respiratory symptoms are present in Shisha smokers and these symptoms may affect their lung function

The availability, cost, and affordability of essential medicines for asthma and COPD in low- and middle-income countries: A systematic review

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Introduction

Asthma and COPD cause a high burden of morbidity and mortality in low- and middle-income countries (LMICs). Access to quality-assured, affordable, and safe essential medicines is variable. Our aim was to review the existing literature relating to the availability, cost, and affordability of World Health Organization (WHO) Essential Medicines for asthma and COPD in LMICs.

Methods

We performed a systematic literature review, searching 7 databases to identify articles published between 01.01.2010–30.06.2022 (PROSPERO: CRD42021281069). Original studies concerning WHO Essential Medicines for asthma and COPD in LMICs were included. Review articles were excluded. Two authors screened, extracted data, and assessed for bias using Joanna Briggs Institute appraisal tools independently. The main outcomes were availability (WHO target of 80%), cost (compared to median price ratio (MPR)) and affordability (number of days of work of the lowest paid government employee to pay for one month of treatment).

Results

Of the 4,742 identified studies, 29 met the inclusion criteria. They provided data from 60 LMICs. All studies had a low risk of bias. 6/58 countries met the 80% availability target for short-acting beta-agonist agonists (SABA), 3/48 countries for inhaled corticosteroids (ICS) and 0/4 for inhaled corticosteroid-long-acting beta-agonist combination (ICS-LABA). Costs were reported by 12 studies: the MPR range was 1.1-351 for SABA, 2.6-340 for ICS and 24 for ICS-LABA (1 study). Affordability was shown in 10 studies: supply for one month of SABA inhalers cost around 1-4, ICS 2-7 and ICS-LABA at least 6 days of wages. The included studies showed heterogeneity.

Conclusion

Essential medicines for treating asthma and COPD were largely unavailable and unaffordable in LMICs. This was especially true for inhalers containing corticosteroids.

Recruitment of a TB and TB/HIV Co-infected participants in a cohort study; Challenges and lessons learnt

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Introduction

Tuberculosis (TB) and (HIV/AIDS) constitute the main burden of infectious diseases in resource-limited countries. In Kenya the current co-infection ratio among the notified TB cases is 25.2%. The aim of this study was to identify reasons associated with recruitment screening failure of a TB and TB/HIV co-infected participants in a cohort study.

Methods

We conducted a cohort study involving recruitment of TB and TB/HIV co-infected participants from three clinical sites in Nairobi, Kenya. Eligibility of participants to be recruited in the study was determined using a structured pre-screening form detailing inclusion and exclusion criteria. Participants aged between 18yr and 65yrs both male and female were screened. Data was analyzed using SPSS version 2-0. multivariate analysis was done to determine the various factors associated with recruitment failure.

Results

A total of 875 TB and TB/HIV coinfecting participants were prescreened for eligibility. It was found that 395(45%) were screening failures with 480(55%) being recruited. Out of recruitment failures 273(69%) were males while 122(31%) were females. Majority of screening failures were in the age groups 18-35 years 200(50.6%) with males constituting 142(35.9%) and females 58(14.7%). The age groups with age exclusion and 35-65 years constituted 41(10.4%) and 154(39.0%) respectively. The main reasons contributing to screening failure were prior history of Tuberculosis disease 68(17.2%), unwillingness to participate 75(19%), age exclusion 39(9.9%), other reasons identified were clinically unstable 18(4.6%), residing outside Nairobi 16(4.1%), Breast feeding and pregnant 12(3%). However, 119(30.1%) were reported to be screening failure but the reason was not given. No significant baseline predictors were identified in the multivariable model dependent on gender or age group ($p=0.521$).

Conclusion

Although statistically significance prior Tuberculosis history, Unwillingness to participate and age exclusion were major reasons contributing screening failure in this TB and TB/HIV cohort study.



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