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ABSTRACTS

UNIVERSAL HEALTH COVERAGE TESTED DURING THE COVID-19 PANDEMIC – EDITOR'S OBSERVATIONS

Editorial

By : M L Mazaba

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Following the endorsement of a resolution by the United Nations General Assembly on 12th December 2012 urging countries to accelerate progress toward Universal Health Coverage (UHC), 12 December was proclaimed as International Universal Health Coverage Day (UHC Day) by resolution 72/138 in the year 2017 [1]. UHC resolves around ensuring that everyone everywhere has access to quality, affordable health care as an essential priority for international development. The World Health Organisation indicates that Universal Health Coverage (UHC) means that all the people and communities can use the promotive, preventive, curative, rehabilitative and palliative health services they need while also ensuring that the use of these services does not expose the users to financial hardship [2].

Zambia's goal of attaining Universal Health Coverage is amplified in its strategic plans including 'Vision 2030, '7Th National development Plan' and 'National Health Strategic Plan 2017/21' emphasising the need to provide the Zambian people with equitable access to cost effective, quality health services as close to the family as possible [3].

Barely a year since the declaration of dedicating a day to remember and re-emphasise Universal Health Coverage Day (UHC Day), all countries that were part of the resolution were tested with the COVID-19 pandemic. As countries closed borders, those in the third world were constrained with access to medicines and medical consumables as well as essential commodities. Many countries report hindrances in delivering routine healthcare services and reaching globally agreed and nationally set targets. We also observe countries that were better placed resilient health systems also broken down as they were overwhelmed with patients requiring critical care and management.

While Zambia also faces challenges in securing essential commodities, medicines and medical supplies, the country as part of its COVID-19 multisectoral strategic response has included 'maintenance of routine healthcare services' as a strategic pillar. Recognizing the set-backs in heath seeking behavior towards immunization, sexual and reproductive health, maternal and child health, care for the ageing, and management of both infectious and non-infectious diseases, Zambia continues to resource mobilise, capacity build and safeguard commodities for essential and routine health services. Resources including vaccines are continually shared equitably across the country.

The Editor agrees with the sentiments by Secretary-General António Guterres who said "In responding to the pandemic, we have seen rapid innovative approaches to health service delivery and models of care, and advances in preparedness. We must learn from this experience. For Universal Health Coverage Day, let us commit to end this crisis and build a safer and healthier future by investing in health systems that protect us all — now."[1].

LIST OF REFERENCES

1. 1.United Nations. https://www.un.org/en/observances/universal-health-coverage-day
2. 2.World Health organisation. https://www.who.int/campaigns/universal-health-coverage-day/universal-health-coverage-day-2020
3. 3.Ministry of Health Reports.

EVIDENCE BRIEF AND TECHNICAL DOSSIER FOR POLICY ON MEDICAL CANNABIS IN ZAMBIA

Perspective

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EVIDENCE BRIEF

Key Messages

- Medicinal Cannabis may be classified into Marijuana, with a concentration of the psychoactive substance (alters brain function) delta-9-tatrahydrocannabinol (THC) of more than 0.3% and Industrial Hemp or Cannabidiol (CBD) with a concentration of THC no more than 0.3%.
- Combinations of THC and CBD have been shown to have medicinal value for alleviating chronic pain of nerve origin, nausea and vomiting associated with cancer chemotherapy, certain types of epilepsy, loss of appetite and weight loss associated with AIDS, and some mental illnesses, such as schizophrenia.
- However, although there are some cannabis-based medicines that have been licensed for use, for example in the United States, overall, research evidence on the effectiveness of medicinal cannabis on the above conditions and other medical conditions is divided and not yet conclusive.
- Research evidence shows that side effects from cannabis with a higher THC concentration outweighs the benefits; but there is potential for use of CBD based cannabis medicines because they have fewer side effects and CBD has essentially no psychoactive effects; with little if any potential for abuse.
- One CBD based cannabis medicine, Epidiolex, is now licensed in the United States for treatment of some forms of epilepsy that are resistant to common medicines for seizures.
- There are two THC based cannabis medicines licensed in the United States. They are: Dronabinol (Marinol ®), a synthetic THC, for treatment of nausea and vomiting caused by cancer chemotherapy and loss of appetite and weight loss due to AIDS; Nabilone (Cesamet ®) also used for nausea and vomiting due to cancer chemotherapy.
- WHO ECDD Recommendations: The November, 2018 WHO Expert Committee on Drug Dependence (ECDD) (Annex 1) recommended that Cannabis and Cannabis Resin be deleted from Schedule IV of the Single Convention on Narcotic Drugs (1961); that Dronabinol (delta-9-tetrahydrocannabinol) be added to Schedule I of the Single Convention on Narcotic Drugs (1961); that Tetrahydrocannabinol (isomers of delat-9-tetrahydrocannabinol) be added to schedule I of the Single Convention on Narcotic Drugs (1961); *"Preparations containing predominantly cannabidiol and not more than 0.2 per cent of delta-9-tetrahydrocannabinol are not under international control."*

preparations considered to be pure cannabidiol (CBD) should not be scheduled within the International Drug Control Conventions by adding a foot note to the entry for cannabis and cannabis resin in Schedule I of the Single Convention on Narcotic Drugs (1961) to read:

The Problem Brief

In spite of the legal provision to allow for cultivation and dealing with cannabis for medicinal and scientific purposes, that provision has never been implemented in Zambia. The main reason for non-implementation of the law in this regard is the fact that there are no regulations to operationalize the legal provisions. Regulations have not been developed possibly due to lack of evidence on medical value of implementing a program for medicinal cannabis in Zambia.

In the recent past, the Ministry of Health (MOH) has been under pressure to issue licenses to prospective developers to cultivate Cannabis for medicinal and/or scientific purposes.

Is there strong, reliable, and conclusive evidence on the efficacy, effectiveness, and safety of cannabis for medicinal use? Is there justification for Zambia to grow Cannabis for medicinal and/or scientific use?

The key questions are:

Policy Options

1.0 Cultivate Industrial Hemp for research purposes only

What: MOH to issue licenses for cultivation of Industrial Hemp (Cannabidiol/CBD with no more than 0.2% THC) on pilot basis for scientific/ health research purposes only.

Why: Evidence shows that CBD is effective against some forms of epilepsy and may alleviate some symptoms of schizophrenia. There is however insufficient evidence for use of CBD alone for chronic pain, nausea and vomiting from cancer chemotherapy and other medical conditions. More high quality randomized controlled longitudinal clinical trials are need to have conclusive results. The potential for the medicinal value of cannabis lies in exploring the efficacy and safety of CBD because, with less than 0.3% THC, it has been shown to have no psychoactive effects. However, the current evidence on the effectiveness and safety profiles of the THC/CBD combinations is still mixed and not conclusive; but it is clear that the more THC there is in this combination, the more side effects there are.

Operational feasibility: Moderate to High. Due to the non-psychoactive nature of CBD, the chance of abuse is low and therefore, licensing cultivation of Industrial Hemp for research purposes is feasible.

Considering that according to the WHO ECDD preparations containing predominantly cannabidiol and not more than 0.2% THC are not under international control, there will be less stringent security measures for its cultivation, processing, and export.

2.0 Cultivate both Industrial Hemp and Marijuana for research purposes only

What: MOH to issue licenses for cultivation of both Marijuana and Industrial Hemp (Cannabidiol with no more than 0.2% THC) on pilot basis for health research purposes.

Why: Evidence shows that THC alone and in combination with CBD is effective against chronic pain due to nerve irritation, nausea and vomiting from cancer chemotherapy and other medical conditions.

There are currently two THC based medications licensed in the United States. However, the current evidence on the effectiveness and safety profiles of the THC/CBD combinations is still mixed and not conclusive. More high-quality randomized, controlled, longitudinal clinical trials are need to provide conclusive results.

Operational feasibility: Low. Due to the psychoactive nature of THC, the chance of abuse is very high; restricting Marijuana to health research and controlling the recreational use would be a big challenge.

3.0 Cultivate both Industrial Hemp and Marijuana for medicinal and research purposes

What: MOH to issue licenses for cultivation of both Marijuana and Industrial Hemp (Cannabidiol with no more than 0.2% THC) on full scale for both medicinal and health research purposes.

Why: Evidence shows that THC alone and in combination with CBD is effective against chronic pain due to nerve irritation, nausea and vomiting from cancer chemotherapy and for spasticity associated with Multiple Sclerosis.

Operational feasibility: Low. Due to the psychoactive nature of THC, the chance of abuse for recreational purposes is very high.In addition, other than the two epileptic conditions, which are rare in Zambia,

There is no evidence that Cannabis-based medications are better than current conventional medicines for medical conditions prevailing in Zambia.

Policy Recommendations

1.The overarching recommendation is for Zambia to implement a program for cultivation of medicinal cannabis for scientific purposes only.

2.The specific recommendation is that the Minister of Health may issue licenses for cultivation of Industrial Hemp (Cannabidiol with no more than 0.2% THC) for scientific purposes only until such a time that there is conclusive evidence to warrant cultivation on a wider scale for medical use.

3.The current legal framework should be supported by subsidiary legislation that will provide the manner and form of the licensing process as recommended by the Committee on cultivation of Cannabis for Medicinal Purposes (Annex 2).

i.Regulations should be developed to provide for the governance structure, security measures, cultivation requirements, processing requirements, packaging and labelling, testing and research regulation requirements, research implementation arrangements, transportation requirements, community engagement, compliance to international standards.

4.Due to the sensitive nature of Cannabis, and in compliance with the UN Single Convention on Narcotic Drugs (1961), Article 28, MOH should put in place a system of control in collaboration with other relevant Ministries, such as Ministry of Agriculture.

5.A Multi-Stakeholder Technical Committee on Medical Cannabis for Scientific Use should be constituted under the leadership of the National Health Research Authority (NHRA) to spearhead the implementation process.

Key Definitions

Cannabis refers to 'the flowering or fruiting tops of the cannabis plant (excluding the seeds and leaves when not accompanied by tops) from which the resin has not been extracted, by whatever name they may be designated' [3].

Cannabis is a generic term plant genus with various ways of classifications in literature. However, for the sake of this Policy Brief we will divide Cannabis into two as defined by the Colorado (USA) Constitution [4]:

- Marijuana being a plant of the genus Cannabis and any part of that plant, whether growing or not, with a concentration of delta-9-tatrahydrocannabinol (THC) of more than 0.3%
- Industrial Hemp being any Cannabis with a concentration of THC no more than 0.3%.

Cannabinoids are chemical compounds that act on cannabinoid receptors (CB1) in cells that alter neurotransmitter release in the nervous system [5].

Phytocannabinoids are cannabinoids that occur naturally in the cannabis plant. Cannabis acts through these chemical substances. There are two phytocannabinoids of importance for this Policy Brief: Delta-9-tatrahydrocannabinol (THC) and Cannabidiol (CBD). THC is the psychoactive substance in Cannabis and is responsible for the pleasurable subjective effects [6].

Cannabidiol (CBD) is similar in structure to THC but has no psychoactive effects [7].

Medicinal Cannabis or Cannabis for medical use refers to the use of cannabis and its constituents, natural or synthetic, to treat disease or alleviate symptoms under professional supervision [8].

Medical purposes: 'A medicine (medicinal substance; that is, whether synthetic and/or natural, pure or in the form of a preparation) is a substance used, designed or approved for the following medical purposes: a) Improving health and well-being; b) Preventing and treating disease (including the alleviation of symptoms of that disease); c) Acting as a diagnostic aid; d) Aiding conception or providing contraception; e) Providing general anaesthesia' [8].

Scientific purposes: 'The designation of the use of a drug for "scientific purposes" is appropriate when it is used as a tool for investigating mechanisms of health or disease or when investigating the use of a product as a medicine. In patients, the investigation would be done as part of a clinical trial, which requires prior approval from the research ethics committee' [8].
Feasibility of Policy Options – The likelihood that the policy option will be adopted and implemented.

Low Feasibility: No or small likelihood of being adopted and implemented
Medium Feasibility: Medium likelihood of being adopted and implemented
High Feasibility: High likelihood of being adopted and implemented.

TECHNICAL DOSSIER

Background

Global Legal Perspective on Medicinal Cannabis

Cannabis for medicinal and scientific use is governed by three United Nations Conventions: Single Convention on Narcotic Drugs (1961 as amended by the 1972 Protocol), Convention on Psychotropic Substances (1971), and Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances (1988). (Annexe 3). The International Narcotics Control Board (INCB) is the independent and quasi-judicial monitoring body for the implementation of the United Nations international drug control conventions. It was established in 1968 in accordance with the Single Convention on Narcotic Drugs (1961)[

https://www.incb.org/incb/en/about/mandate-functions.html
].

A number of countries have legalized Cannabis for medical use. As at March 29, 2019, these include Australia, Argentina, Bermuda, Canada, Chile, Colombia, Croatia, Cyprus, Czech Republic, Denmark, Finland, Germany, Georgia, Greece, Israel, Italy, Jamaica, Lesotho, Luxembourg, Malta, North Macedonia, Norway, Netherlands, New Zealand, Peru, Poland, San Marino, South Africa, Sri Lanka, Switzerland, Thailand, United Kingdom, Uruguay, Vanuatu, Zimbabwe. In the United States of America, 33 States plus the District of Columbia, have legalized Cannabis for medical use, but Federally, Cannabis remains illegal for any use [1,2].

Zambian Legal Perspectives on Medicinal Cannabis

In Zambia, the cultivation and use of Cannabis and other related substances is mainly regulated by the following laws:
1.The Dangerous Drugs Act, Chapter 95 of the Laws of Zambia, 1967 (Annex 4)
2.Narcotics and Psychotropic Substances Act, Chapter 96 of the Laws of Zambia, 1993 (Annex 5)
3.The Medicines and Allied Substances Act of 2013 (Annex 6)
The Dangerous Drugs Act of 1967 under the Ministry of Health provides for the control of the importation, exportation, production, possession, sale, distribution and use of dangerous drugs; and to provide for matters incidental thereto. The Act applies to raw opium, coca leaves, poppy-straw, cannabis, cannabis resin and all preparations of which cannabis resin forms the base. Any person who wants to import or export any of the above products needs a license issued by the Minister of Health. The Narcotics and Psychotropic Substances Act of 1993 under the Ministry of Home Affairs, prohibits or criminalizes the trafficking, importation, exportation, possession and cultivation, use of, manufacture, and trading in narcotics, including cannabis.

The Medicines and Allied Professions Act of 2013 provides for the general regulation of the pharmaceutical industry in Zambia under the Zambia Medicines Regulatory Authority (ZAMRA). Anyone who wants to cultivate cannabis for medicinal or scientific purposes is expected to apply to ZAMRA, the authority designated to enforce and administer the provisions of this Act.

Problem Statement

In spite of the legal provision to allow for cultivation and dealing with cannabis for medicinal and scientific purposes, that provision has never been implemented in Zambia. The main reason for non-implementation of the law in this regard is the fact that there are no regulations to operationalize the legal provisions. Regulations have not been developed possibly due to lack of evidence on the medical value of implementing a program for medicinal cannabis in Zambia. In the recent past, the Ministry of Health has been under pressure to issue licenses to prospective developers to cultivate Cannabis for medicinal and/or scientific purposes. This evidence brief aims to answer specific questions to provide evidence for the Ministry of Health to make an informed decision. The main questions are:
What evidence is there on the effectiveness and safety of medicinal cannabis in treating various medical conditions? And how strong and reliable is the evidence on the efficacy and effectiveness of cannabis for medicinal use? Is there justification for Zambia to grow Cannabis for medicinal use? What evidence is there on the effectiveness and safety of medicinal cannabis in treating various medical conditions? And how strong and reliable is the evidence on the efficacy and effectiveness of cannabis for medicinal use? Is there justification for Zambia to grow Cannabis for

medicinal use?

The Research Evidence on Medical Cannabis

Introduction

Our review of systematic reviews published between January 2014 and February 2019, shows a long list of medical conditions treated with medical cannabis. The grade of quality and weight of this evidence in terms of effectiveness to treat a particular condition is mixed.
This brief relies on evidence graded as high to moderate quality on the GRADE quality system [9] and graded as moderate to conclusive weight, based on the grading by the Health and Medicine Division, formally the Institute of Medicine (IOM) of the National Academies, USA [10]. The GRADE is a system used to assess the quality of evidence of each outcome in a systematic review against eight criteria (including risk of bias, indirectness, inconsistency, imprecision, publication bias). The quality of evidence for each outcome is graded as High, Moderate, Low, or Very Low (Table 1). The assessment reflects the degree of confidence in the effect estimate (e.g. Odds ratio, Risk Ratio). A rating of High means that having assessed all potential problems with the quality of the evidence, we are so confident in our estimate that further research is very unlikely to alter that effect estimate.

We constructed table 2 to explain the rating of evidence into Conclusive, Substantial, Moderate, Limited or Insufficient as used by the National Academies of Sciences, Engineering, and Medicine [10]. Any reference to 'conclusive' or non-conclusive evidence in this evidence brief has the meaning and interpretation as explained in table 2.

We reviewed systematic reviews, umbrella reviews, and controlled clinical trials on the efficacy, effectiveness, and safety of cannabis for medicinal use in chronic pain, treatment of nausea and vomiting associated with chemotherapy, Epilepsy, and Schizophrenia/Psychosis. The main focus will be on pain as that is the area that medicinal cannabis has been most used for. This evidence brief will also review and synthesize evidence on Hemp for medicinal/therapeutic and health use, considering that it has less or no psychoactive effects.

Table 1 The GRADE Rating System

Quality Rating	Meaning
High	We are **very confident** that the true effect lies close to the estimated effect size.
Moderate	We are **moderately confident** that the true effect likely to be close to the estimated effect size, but there is a possibility that it is substantially different.
Low	Our confidence in the effect is **limited** because the true effect may be substantially different from the estimated effect size.
Very Low	We have **very little confidence** in the effect estimate because the true effect is likely to be substantially different.

Adapted from Ryan R. Hill (2016):
https://cc.cochrane.org/sites/cc.cochrane.org/files/public/uploads/how_to_grade.pdf
Based on the GRADE Handbook found at:
https://gdt.gradepro.org/app/handbook/handbook.html#h.9rdbelsnu4iy

Table 2 Weight of Evidence

Weight of Evidence	Meaning and description	Interpretation
Conclusive evidence	There is **strong evidence** from Randomized Controlled Trials (RCTs) to support the conclusion that the medicine is effective or ineffective to treat the health endpoint of interest (e.g. pain, vomiting, etc).	The interpretation of this level of evidence is that there are a lot of supportive findings from good quality studies with no credible opposing findings. Therefore a **firm conclusion** can be made and the **limitations to the evidence such as chance, bias, and confounding can be ruled out with reasonable confidence.**
Substantial Evidence	There is **strong evidence** to support the conclusion that the medicine is effective or ineffective to treat the health endpoint of interest.	The interpretation is that there are several supportive findings from good quality studies with very few or no credible opposing findings. Therefore a **firm conclusion** can be made, but **minor limitations** such as chance, bias, and confounding cannot be ruled out with reasonable confidence.
Moderate Evidence	There is **some evidence** to support the conclusion that the medicine is effective or ineffective to treat the health endpoint of interest.	There are several supportive findings from good to fair quality studies with very few or no credible opposing findings. Therefore a general conclusion can be made, but **limitations** such as chance, bias, and confounding cannot be ruled out with reasonable confidence.
Limited Evidence	There is **weak evidence** to support the conclusion that the medicine is effective or ineffective to treat the health endpoint of interest.	There are supportive findings from to fair quality studies or mixed findings with most favouring one conclusion. Therefore a conclusion can be made, but there is **significant uncertainty** due to chance, bias, and confounding.
No Evidence or Insufficient Evidence	There is **no or insufficient evidence** to support the conclusion that the medicine is effective or ineffective to treat the health endpoint of interest.	There are mixed findings, a single poor quality study, or health endpoint has not been studied at all. Therefore no conclusion can be made because there is **substantial uncertainty** due to chance, bias, and confounding.

Table constructed based on information from National Academies of Sciences, Engineering, and Medicine (2017). The health effects of cannabis and cannabinoids: The current state of the evidence and recommendations for research. Washington, DC: The National Academies Press.
http://nap.edu/24625

Effect of medical cannabis on Chronic Pain

There is moderate quality evidence that medical cannabis alleviates chronic pain, especially neuropathic pain; however, the weight and quality of the evidence is still mixed. The current evidence is therefore not conclusive.

Is medical cannabis effective for reduction of chronic pain?
The National Academies of Sciences, Engineering, and Medicine concludes in the National Academies Press that there is conclusive or substantial evidence that cannabinoids are effective for treatment of chronic pain in adults [11]. This conclusion is mainly based on a systematic review by Whiting PF et al [10]. In a systematic review and meta-analysis of 28 randomized clinical trials (RCTs) and based on the GRADE approach to assess the quality of the RCTs, Whiting and others in 2015 concluded that there

was moderate quality evidence to support the use of Cannabinoids for the treatment of chronic pain [12]. Cannabinoids were associated with short term adverse events. Although this was a rigorously conducted review, Whiting and his team point out a number of methodological issues in the studies they reviewed. Caution should therefore be exercised in relying on just this evidence synthesis as conclusive or substantial evidence. It is also important to take into account other evidence and counter-evidence in the literature to have a balanced view. Below, we summarize other evidence on the subject matter. In 2015, Andreae and others in a systematic review with Bayesian meta-analysis of 5 RCTs and 178 participants concluded that inhaled cannabis may provide short-term relief for one in 5 to 6 patients with neuropathic pain [13]. The authors however caution that the small number of studies and participants, the short follow-up, shortcomings in allocation concealment, and considerable attrition limit the conclusions that can be made from their review [13].

Shannon M. Nugent and others in a systematic review of 27 RCTs, 2 systematic reviews, and 3 observational studies in 2017 report that limited evidence suggests that Cannabis may alleviate neuropathic pain in some patients, but there is insufficient evidence for other types of chronic pain. Limited evidence suggests that Cannabis is associated with an increased risk of adverse mental health effects [14].

According to Peter Reynolds, there is a large quantity of good quality evidence that demonstrate efficacy and safety in treating chronic pain, especially neuropathic pain [15]. He substantiated this conclusion by referring to five sources [16, 17, 18, 19, 20]. Please note that this was not a systematic review study and Reynolds did not apply any quality standard to assess and grade these studies. Below, we summarize the studies quoted by Reynolds: In 2007, Abrams DI and others in a placebo-controlled RCT of 50 patients with painful HIV-associated sensory neuropathy reported that smoked cannabis reduced daily pain by 34% versus 17% in the placebo group (p=0.03) [16].

Wilsey B et al. in the same year (2007) in a double-blind placebo-controlled cross over trial of 38 patients with chronic pain using 3.5% and 7% delta-9-THC smoked cannabis concluded that cannabis may be effective at ameliorating neuropathic pain. [17] They observed significant analgesia expressed as a 0.0035 reduction in visual analog scale (VAS) pain intensity per minute from both the 3.5% and the 7% cannabis compared to placebo. The combined group of 3.5% and 7% versus placebo produced a difference of -0.0035 (95% CI: -0063 to -0.0007; P=0.016).

A phase 2 double-blind placebo-controlled crossover clinical trial of 28 HIV positive patients with neuropathic pain by Ellis and others using smoked cannabis of 1 to 8% delta-9-TCH reported greater pain relief with cannabis than placebo: Median difference in the descriptor differential scale (DDS) pain intensity change of 3.3 points, effect size 0.60; p=0.016. The proportion of patients achieving at least 30% pain relief with cannabis was 0.46 (95% CI: 0.28 to 0.65) compared to 0.18 (95% CI: 0.03 to 0.32) in the placebo group. [18]

A randomized controlled trial of 23 adults with post-traumatic or post-surgical neuropathic pain found that the average pain intensity using an 11-point numeric rating scale (0=no pain, 11=worst pain) was significantly lower on 9.4% delta THC (pain intensity rate=5.4) than on 0% delta THC (6.1)(P=0.023; difference=0.7, 95% CI: 0.02-1.4)[19].

The last study that Peter Reynolds quoted was a randomized, placebo-controlled, double-dummy, double-blind trial that compared the magnitude and duration of analgesic effects of smoked marijuana and dronabinol under well controlled conditions using a validated experimental model. In this study where pain response was assessed using the cold-pressor test (CPT) in 30 healthy daily marijuana smokers, Cooper and others report that under controlled conditions marijuana and dronabinol decreased pain, with dronabinol producing longer-lasting decreases in pain sensitivity and lower ratings of abuse-related subjective effects than marijuana [20].

However, a recent (2018) Cochrane systematic review concludes as follows: "The potential benefits of cannabis based medicine (herbal cannabis, plant derived or synthetic THC, THC/CBD oromucosal spray) in chronic neuropathic pain might be outweighed by their potential harms. The quality of evidence for pain relief outcomes reflects the exclusion of participants with a history of substance abuse and other significant comorbidities from the studies, together with their small sample sizes" [21]. And the plain language summary states, "there is a lack of good evidence that any cannabis-derived product works for any chronic neuropathic pain."

As we conclude this section on medicinal cannabis and chronic pain, we need to answer a critical policy relevant question: Is medical cannabis more effective and better tolerated than other currently available analgesics for chronic pain?

We found no evidence from systematic reviews or RCTs showing that medical cannabis is more effective and better tolerated than opiates or other analgesics. There is some conflicting ungraded evidence that cannabis use may reduce opiate use in patients with chronic pain.

A retrospective cross-sectional survey of 244 medical cannabis patients with chronic pain found that medical cannabis was associated with a 64% decrease in opioid use (n=118), decreased number and side effects of medications, and an improved quality of life (45%) [22]. However, other evidence shows that marijuana use, especially chronic use, may affect pain response to injury by requiring greater use of opioid analgesia [23].

Effect of medical cannabis on nausea and vomiting due to chemotherapy

Is medical cannabis effective in reducing nausea and vomiting associated with cancer chemotherapy?

There is moderate quality evidence that medical cannabis is effective in reducing nausea and vomiting associated with cancer chemotherapy. The current evidence may not be regarded as conclusive or substantial, despite the fact that there are cannabis-based medications already licensed for use in this condition.

According to Whiting and others (2015), there was low-quality evidence suggesting

that Cannabinoids were associated with improvements in nausea and vomiting due to chemotherapy [12]. In a review of three trials, Whiting found that compared to placebo, cannabinoids were associated with a greater average number of patients showing a complete nausea and vomiting response (47% versus 20%; OR 3.82, 95% CI: 1.55 to 9.42). Based on this and other evidence, the National Academies of Sciences, Engineering, and Medicine, writing in the National Academies Press (2017) reported that there was conclusive or substantial evidence that cannabis or cannabinoids are effective as antiemetics in the treatment of chemotherapy-induced nausea and vomiting [10]. The Academies review team appears to have based their conclusion on the reviews by Whiting et al (2015) and Smith et al (2015) [24]. The team however acknowledged the fact that despite some positive findings in favour of Cannabinoids, Smith and team concluded that there was no evidence to support the use of cannabinoids over current first-line antiemetics and that cannabinoids should be considered as adjunctive treatment for people that are on moderately or highly emetogenic to chemotherapy that are refractory to other antiemetics, when all other options have been tried.

The Academies of Sciences, Engineering and Medicine review team also refer to three cannabinoid-based drugs, Dronabinol (Marinol ®), Nabilone (Cesamet ®) and Syndros® the liquid formulation of Dronabinol; all licensed by the US Food and Drugs Administration (FDA) and indicated for nausea and vomiting due to cancer chemotherapy. Considering Whiting's conclusion and the caution by Smith and others, we advise to exercise caution and conclude that there is moderate evidence to support a conclusion that cannabinoids are effective for cancer therapy related nausea and vomiting.

Effect of medical cannabis in Schizophrenia

Current evidence on the efficacy and effectiveness of medicinal cannabis in treating Schizophrenia is Limited.

Is medicinal cannabis effective and safe in the treatment of Schizophrenia?
In a recently published (2019) systematic review of literature on Cannabis and mental illness, Lowe Darby and other concluded that current evidence supports more harmful effects of recreational cannabis use on mental illness rather than therapeutic [25].

Effect of medical cannabis in Multiple Sclerosis

Is medicinal cannabis effective and safe in the treatment of Multiple Sclerosis?

Current evidence on the efficacy and effectiveness of medicinal cannabis in treating spasticity associated with multiple sclerosis is moderate.

The National Academies of Sciences, Engineering, and Medicine (2017) reported that there was conclusive or substantial evidence that cannabis or oral cannabinoids are effective for improving patient-reported multiple-sclerosis spasticity symptoms; but there is limited evidence that cannabis or oral cannabinoids are effective in improving physician-measured multiple sclerosis spasticity symptoms [10]. They also report that there is moderate evidence that cannabis or cannabinoids (primarily nabiximols) are effective in improving short-term sleep outcomes in individuals with sleep disturbance associated with multiple sclerosis. The Academies team based their conclusions on the effect of cannabis or cannabinoids on multiple sclerosis spasticity on two systematic reviews by Whiting et al (2015) and Koppel et al (2014) [26] and one placebo-controlled crossover clinical trial by Leocani et al. [27]. Whiting et al. concluded that there was moderate evidence to support the use of cannabinoids for spasticity. Based on five trials, Whiting and team report an average reduction in the Ashworth spasticity scale[The Ashworth spasticity scales assesses the effect of anti-spasticity drugs on spasticity in multiple sclerosis. https://www.sralab.org/rehabilitation-measures/ashworth-scale-modified-ashworth-scale] (Weighted Mean Difference, -0.12; 95% CI: -0.24 to 0.01).

Barbara S. Koppel and others, in a systematic review of medical marijuana of 34 studies, with 8 rated Class 1 based on American Academy of Neurology classification scheme for therapeutic articles (Class 1 being most rigorous and 4 as least rigorous)[https://www.aan.com/siteassets/home-page/policy-and-guidelines/guidelines/about-guidelines/17guidelineprocman_pg.pdf

], concluded that with regard to spasticity, oral cannabis extract (OCE) is effective (based on 2 Class 1 studies); nabiximols and THC are probably effective for reducing patient centred measures; it is possible both OCE and THC are effective for reducing both patient centred and objective measures at one year. They warn however that the risks and benefits of medical marijuana should be weighed carefully. They found that the risks of serious adverse psychopathologic effects was nearly 1%. They also conclude that comparative effectiveness of medical marijuana versus other therapies is unknown for the indications studied (which included spasticity in multiple sclerosis).

Effectiveness, efficacy, and safety of Hemp as medicine and health product

Effectiveness, efficacy, and safety of Hemp as medicine

Literature suggests that cannabidiol (CBD) has broad therapeutic value [28]. According to Jamie Corroon and Joy A. Phillips, CBD products are currently purchased online, over the counter and at cannabis-specific dispensaries throughout most of the US despite the fact that CBD is generally deemed a Schedule 1 controlled substance by the US Drug Enforcement Administration and renounced as a dietary supplement ingredient by the US Food and Drugs Administration [28].
The question is how strong and conclusive is the current evidence on the effectiveness and safety of CBD in treating specific medical conditions to warrant licensing?

CBD and Epilepsy

To-date, there is only one CBD product, Epidiolex, recently licensed (June, 2018) by the Food and Drug Administration (FDA) in the USA. Epidiolex (Cannabidiol oral solution) was launched in November, 2018 and is used for the treatment of seizures associated with the Lennox-Gastaut Syndrome (LGS) or Drovet syndrome.

There are at least two key pieces of recent evidence supporting the above use:

a)In a randomized placebo-controlled clinical trial, Devinsky and others report that among 120 children with Dravet syndrome from 23 Centers in the US and Europe, the median frequency of convulsive seizures per month decreased from 12.4 to 5.9 in the CBD group compared with a decrease from 14.9 to 14.1 in the placebo (P=0.01); the percentage of patients who had at least a 50% reduction in convulsive seizure frequency was 43% with CBD and 27% with placebo (OR=2, 95% CI=0.93 to 4.30, P= 0.08); the frequency of seizures of all types significantly reduced with CBD (P= 0.03) but there was no reduction in nonconvulsive seizures; 5% of patients became seizure free with CBD and none in the placebo (P=0.08). Adverse events occurred more frequently in the CBD group than placebo; these included diarrhoea, vomiting, fatigue, pyrexia, somnolence, abnormal liver function tests. [29]
b)In a randomized placebo-controlled clinical trial of 225 patients with Lennox-Gastaut Syndrome (LGS) aged 2-55 years from 30 clinical centres in the US and Europe, Devinsky and others report that the median percentage reduction in drop-seizure frequency from baseline 41.9% in the 76 patients taking 20mg CBD, 37.2% in patients taking 10mg CBD, and 17.2% in the placebo group (P=0.005 for the 20mg CBD versus placebo and P=0.002 for the 10mg versus placebo). The most common adverse events among patients in the CBD group were somnolence, decreased appetite, and diarrhea and occurred more frequently in the 20mg CBD group. Six patients in the 20mg CBD group and one patient in the 10mg CBD group discontinued the trial medication because of adverse events and were withdrawn from the study. Nine percent (n=14) who received CBD had elevated liver aminotransferase concentrations. [30].
Other than in various combinations with THC, there is currently no conclusive evidence that CBD is effective in any other medical condition.

CBD in Schizophrenia

Current evidence on the effectiveness of CBD on Schizophrenia is mixed and not conclusive.

From several references, Darby J.E. Lowe and others present studies that show that CBD is effective in treating Schizophrenia as well as studies that show that it is not effective [22]. McGuire and others in an exploratory double-blind parallel-group trial of 88 patients with Schizophrenia, report that after 6 weeks of treatment, patients on CBD had lower levels of positive psychotic symptoms (PANNS: Treatment difference = -1.4, 95% CI: -2.5, -0.2) and were more likely to have been rated by the treating physician as improved (CGI-I: Treatment difference = -0.5. 95% CI: -0.8, -0.1) compared to Placebo. CBD was well tolerated, and the rates of adverse events were similar between the CBD and placebo groups [31].

FM Leweke and others in a therapeutic exploratory (phase 2) double-blind, parallel-group randomized controlled clinical trial of 42 patients with Schizophrenia or schizophreniform psychosis comparing CBD versus amisulpride, report that either treatment was safe and led to significant clinical improvement; CBD displayed a better side effect profile [32]. However, Boggs and colleagues, in a randomized, placebo-controlled, parallel group, fixed-dose study of oral CBD (600mg/day) or placebo augmentation in 36 stable antipsychotic-treated patients diagnosed with schizophrenia, found that CBD augmentation was not associated with an improvement in the Matrics Consensus Cognitive Battery (MCCB) or Positive and Negative Syndrome Scale (PANSS) scores; though overall, CBD was well tolerated with no worsening of mood, suicidality, or movement side effects [33].

CBD in chronic pain

There is currently no conclusive evidence on the effectiveness of CBD on its own (i.e. not in combination with THC) in alleviating chronic pain, despite its use by patients for that purpose. The majority of the studies on cannabinoids and chronic pain have focused on chronic neuropathic pain and specifically on nabiximols (Sativex), which is a combination of THC and CBD rather than CBD alone [34].

In a cross-sectional study of 2,409 CBD users by Jamie Corroon and others, 62% of users reported using it to treat a medical condition; top on the list being chronic pain, arthritis/joint pain, and anxiety [24]. In this study, 35.8% of those who used CBD to treat a medical condition (N=1483) said CBD treated their medical condition(s) "very well by itself." But the effect on pain was not specifically assessed.

CBD in the treatment of nausea and vomiting associated with chemotherapy

There is no conclusive high-quality evidence on the efficacy of CBD in treating nausea and vomiting related to cancer chemotherapy.

There is evidence that cannabinoids, THC and CBD combined, may alleviate nausea and vomiting associated with cancer chemotherapy, but even such evidence is not conclusive. Whiting, in a systematic review based on three studies, reported that compared to placebo, cannabinoids were associated with a greater average number of patients showing a complete nausea and vomiting response (47% versus 20%, OR 3.82, 95% ci: 1.55-9.42). However, he concludes that there was low quality evidence suggesting that cannabinoids were associated with the improvements in nausea and vomiting due to chemotherapy. Cannabinoids were associated with an increased risk of short-term adverse events [12].

Donald I. Abrahams, in a recent review article in the European Journal of Medicine, the National Academies of Sciences, Engineering and Medicine states that the committee on health effects of cannabis and cannabinoids concluded that there was conclusive or substantial evidence that Cannabis or Cannabinoids are effective for treatment of pain in adults, chemotherapy-induced nausea and vomiting and spasticity associated with multiple sclerosis [10]. This claim has however been questioned by Campbell and colleagues recently who carefully analysed the evidence used in coming up with this conclusion and the limitations of such evidence [34].

Health Benefits of Hemp

We were not able to obtain any RCTs or systematic reviews on the health benefits of hemp in the literature search. However, there is a lot written about the health benefits of hemp; mainly focused on nutrition. Hempseed contains approximately 30% oil and

25% protein, with a considerable amount of dietary fibre, vitamins and minerals [35]. Hempseed oil contains over 80% polyunsaturated fatty acids and is exceptionally rich in two of the essential fatty acids- linoleic acid (omega-6) and alpha-linolenic acid (omega-3). The two main proteins in hempseed are edestin and albumin. Other literature shows that 49% of hempseed contain edible oil that contains 76% essential fatty acids [36]. There are apparently a lot of food products derived from hempseed; these include oil, flour, milk, bakery products, chocolate, beer, etc. [37].

The evidence on the efficacy, effectiveness and safety of medicinal cannabis in various combinations of THC and CBD is mixed. Combinations of THC and CBD have been shown to have medicinal value for alleviating chronic pain of nerve origin, nausea and vomiting associated with cancer chemotherapy, certain types of epilepsy, and some mental illness (schizophrenia). However, although there are some cannabis-based medicines licensed in the United States, overall, the current research evidence is not fully conclusive on the effectiveness and safety of the THC/CBD combinations.

There is greater potential for the use of CBD-based cannabis medicines because they have fewer side effects and CBD has essentially no psychoactive effects; with no potential for abuse. There is also potential for use of industrial hemp (containing CBD) for other health benefits, especially in food and nutrition.

Cultivation of medicinal cannabis for scientific purposes only

1.The overarching recommendation is for Zambia to implement a program for cultivation of medicinal cannabis for scientific purposes only.

2.The specific recommendation is that the Minister of Health may issue licenses for cultivation of Industrial Hemp (Cannabidiol with no more than 0.2% THC) for scientific purposes only until such a time that there is conclusive evidence to warrant cultivation on a wider scale for medical use.

3.The current legal framework should be supported by subsidiary legislation that will provide the manner and form of the licensing process as recommended by the Committee on cultivation of Cannabis for Medicinal Purposes (Annex 2).

i.Regulations should be developed to provide for the governance structure, security measures, cultivation requirements, processing requirements, packaging and labelling, testing and research regulation requirements, research implementation arrangements, transportation requirements, community engagement, compliance to international standards.

4.Due to the sensitive nature of Cannabis, and in compliance with the UN Single Convention on Narcotic Drugs (1961), Article 28, MOH should put in place a system of control in collaboration with other relevant Ministries, such as Ministry of Agriculture.

5.A Multi-Stakeholder Technical Committee on Medical Cannabis for Scientific Use should be constituted under the leadership of the National Health Research Authority (NHRA) to spearhead the implementation process.

Conclusion

Recommendations

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A REVIEW OF DRUG RESISTANT TUBERCULOSIS IN NORTHERN REGION OF ZAMBIA

Abstract

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Background

Zambia is one of the countries in sub-Saharan Africa affected by multi drug/ Rifampicin resistant tuberculosis (TB). However, the drug resistant TB situation over the years has not been described in various regions of the country. Consequently, this review aims to describe the multi drug resistant TB situation in northern region of Zambia over a four-year period to establish gaps in the diagnosis and management of tuberculosis in this region. This is based on data generated from a Regional TB reference Laboratory.

Methods

Data was retrospectively reviewed on 248 GeneXpert Rifampicin resistant TB samples at diagnosis referred for culture at the Regional tuberculosis reference Laboratory over a four-year period (2016-2019). The regional TB Reference laboratory is the only laboratory in the Northern Region of Zambia that provides Mycobacterium culture and drug susceptibility-testing services. The Region includes three provinces namely; Copperbelt, Luapula and North-western. All clinical samples from the various health facilities in this region which by Xpert MTB/RIF test show presence of Mycobacterium tuberculosis resistant to Rifampicin are referred to this laboratory for culture and drug susceptibility testing to first line and second line TB drugs. Data was entered into a pre-tested standardized checklist and later entered in Excel software. Double blinded checking was done by two independent data clerks to minimize duplication of cases. Cleaned data was then exported to SPSS version 25 for analysis. Descriptive statistics were performed and reported as frequencies and graphs.

Results

Out of 248 Xpert/MTB Rifampicin resistant samples, 224 cases were confirmed as drug resistant tuberculosis and of these 71(31%) were from female patients and177(79%) were from male patients. Their ages ranged from 9 months to 64 years with the median age of 35years. Sixty percent (135/224) of these were multi-drug resistant tuberculosis and 35.8% (78/224) were confirmed as Rifampicin Mono-resistant. Only 1.3% (3/224) of the Multi-drug resistant Tuberculosis patients were Pre-extensively drug-resistant. Copperbelt province had the largest proportion (56%) of multi-drug resistant tuberculosis patients followed by Luapula (48%) and North-Western (30%) provinces.

Conclusion/Recommendations

This current study has indicated that despite a slight downward trend in terms of multi-drug resistant Tuberculosis cases, a high incidence of Multi-drug resistant tuberculosis among Rifampicin resistant diagnosed patients was observed with high rates being recorded on the Copperbelt Province. We therefore recommend strengthened routine surveillance and improved case management of multi-drug resistant TB patients in the region. This should include the incorporation of Next Generation sequencing in the diagnosis and clinical management of all MDR/RR TB cases.

UNSAFE ABORTIONS AMONG ADOLESCENTS IN CHIBOLYA COMPOUND, KATETE DISTRICT ZAMBIA

Abstract

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Citation Style For This Article: Zulu M, Banda P, Chipoya R . Unsafe abortions among adolescents in Chibolya compound, Katete District Zambia. Health Press Zambia Bull. 2020; 4(4); pp 13

Background

Worldwide, about 80 million pregnancies are unplanned, and 46 million end in abortions. Of these abortions, 86% occur in developing countries and the majority, 97 %, of these abortions are unsafe. In Zambia, 30% of maternal deaths are due to unsafe abortions and mostly occur among adolescents aged 15-19 years old. Katete District has been recording increased cases of unsafe abortions among adolescents. In 2016 Katete district recorded 653 cases of unsafe abortions while 268 cases were recorded in 2017. Chibolya compound alone contributed 32% of all unsafe abortions among adolescents in Katete district. This study aimed at establishing factors associated with the high incidence of unsafe abortions among adolescents in Chibolya Compound of Katete district, Zambia.

Methods

This was a descriptive cross-section study that was conducted in June and July 2018. The sample comprised of 366 adolescents who, were conveniently selected. A structured interview schedule with questions on socio-demographic characteristics, knowledge on unsafe abortion, knowledge on abortion services, and family planning was used for data collection. Data were analyzed using Statistical Package for the Social Sciences version 23.0. Chi-square statistical test at a 5% level of significance was used to determine the significance of the association between variables.

Results

The study showed that most respondents, 80.6% (295) were aged between 15 and 19 years, and the majority, 89.9% (329) were single. About half of the respondents 51.9% (190) had gone up to secondary level of education. The study showed that 162 (44.3%) of the respondents had aborted before. The Majority of whom 71% (115) had aborted once while 29% (47) had aborted twice or more. About 65.3% (239) had good knowledge of unsafe abortions while 34.7% (127) had poor knowledge of unsafe abortions. The study showed that 38.5% (141) of the respondents mentioned herbs as methods used for aborting.

The majority 81% (296) of the respondents had good knowledge of family planning. About, 33% (121) of the respondents indicated that they knew about pills, condoms, implants, herbs, and injectables as family planning methods and only about 19% (69) of the adolescents indicated that they did not know any family planning method. However, 85.5% (313) had poor knowledge of safe abortion services. The study showed that most Muslim 66.7% (8) had no history of unsafe abortion compared to 55.4% (196) of Christian adolescents. The relationship between unsafe abortion and religious affiliation was significant at a p-value of 0.021.

The study established statistically significant association between knowledge of unsafe abortions and the level of education at a p-value of 0.002. Unsafe abortion was significantly associated with the utilization of family planning services at a p-value of 0.0001.

Conclusion/Recommendations

Poor knowledge of safe abortion services contributed to high levels or unsafe abortions among adolescents. Midwives and other health care providers must design programmes to educate adolescents about the prevention of unwanted pregnancies including, the availability of safe abortion services.

THE ZAMBIAN MPIKA WEIGHBRIDGE IS A PUBLIC HEALTH NUISANCE TO KAICE COMMUNITY!' PERSPECTIVES OF COMMUNITY MEMBERS AND LEADERS.

Abstract

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Citation Style For This Article: Hangulu L, Hangulu PE . The Zambian Mpika Weighbridge is a public health nuisance to Kaice community!' Perspectives of Community members and leaders.. 2020; 44); pp 14

Background

Transportation networks are a public health issue which are important for the fast, efficient, flexible and delivery of health services as well as bulk goods across various destinations and provides transport links for the import and export commodities among countries. It is assumed that high quality transport infrastructure is required for economic development for any country. In Southern African countries, road transports link various countries in the region to ports in South Africa, Mozambique, Angola and Namibia. Road transport alone in Southern Africa carries between 80% to 90% of the region's total trade. In the road transport sector, weighbridges are known to be effective in preventing road deterioration and reduction of traffic accidents. However, it is not clear how their presence affect the surrounding communities. Studies exploring this issue in Zambia are yet to be conducted. This study sought to investigate the effects of the Mpika weighbridge on the surrounding community in Kaice, Northern part of Zambia, from the community members and leaders' perspectives.

Methods

English and Bemba Focus group discussions and semi-structured interviews were used to collect data with fifty respondents consisting of a community headman, 20 community members, a neighborhood health committee, five police officers, three entrepreneurs, 10 truck drivers and six weighbridge officers who were all selected purposively and accessed through snowballing. Data was analysed thematically.

Results

The results of the study revealed that Mpika weighbridge has both positive and negative effects on Kaice community. Positive effects are access to drinking water, availability of accessible roads, schools, employment opportunities to the community members. Negative effects include inadequate sanitation facilities at the weighbridge site causing open defecation around the community. Other problems include an increase in prostitution in the community. Inadequate sanitation and prostitution undermine initiatives aimed at improving the well-being of the people.

Conclusion/Recommendations

To the naked eye, it appears as though the positive effects of the Mpika weighbridge outweigh the negative effects, yet in the eyes of the community members and leaders the weighbridge is a nuisance. These findings are relevant for policy makers, stakeholders and other policy implementers who should use them to conduct further studies on this issue and help to design interventions aimed at addressing all social determinants of health adequately before initiating any social economic projects.

ACCEPTABILITY OF A TRIAL OF VAGINAL PROGESTERONE FOR THE PREVENTION OF PRETERM BIRTH AMONG HIV-INFECTED WOMEN IN LUSAKA, ZAMBIA: A MIXED METHODS STUDY

Abstract

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Background

Antenatal progesterone prevents preterm birth (PTB) in women with a short cervix or prior PTB in daily vaginal or weekly injectable formulations, respectively. Neither has been tested for the indication of maternal HIV, which is associated with an elevated risk of PTB.

Methods

The Vaginal Progesterone (VP) Trial was a pilot feasibility study of VP to prevent HIV-related PTB in Lusaka, Zambia. Using mixed methods, we concurrently evaluated the acceptability of the trial and the study product among participants. Over a 1-year period, we enrolled 140 pregnant women living with HIV into a double-masked, placebo-controlled, randomized trial of daily self-administered VP or placebo. We administered an endline questionnaire to all participants and conducted in-depth interviews with 30 participants to assess barriers and facilitators to uptake and retention in the trial and to study product adherence. All interviews were audiotaped, transcribed, translated into English as needed, and independently coded by two analysts to capture emerging themes.

Results

TOf 131 participants who completed the questionnaire, 128 (98%) reported that nothing was difficult when asked the hardest part about using the study product. When given a hypothetical choice between vaginal and injectable progesterone, 97 (74%) chose vaginal, 31 (24%) injectable, and 3 (2%) stated no preference. Most respondents reported no difficulties with using the study product; others cited minor side effects and surmountable challenges. Strategies that supported adherence included setting alarms, aligning dosing with antiretrovirals, receiving encouragement from friends and family, sensing a benefit to their unborn baby, and positive feedback from study staff. Participants who reported preference of a vaginal medication over injectable mentioned familiarity with the vaginal product, a fear of needles and resulting pain, and inconvenience of a weekly clinic visit as reason for preference. Those who would prefer weekly injections cited fewer doses to remember. Perceived barriers to study participation included mistrust about the motivations behind research, suspicion of Satanism, and futility or possible harm from a placebo.

Conclusion/Recommendations

We report key influences on acceptability of a randomized trial of VP to prevent PTB among HIV-infected women in Zambia, which should inform methods to promote uptake, adherence, and retention in a full-scale trial.

Key words: acceptability; adherence; HIV; progesterone; preterm birth; qualitative; sub-Saharan Africa

CERVICAL CANCER SCREENING UPTAKE AMONG HIV POSITIVE WOMEN SEEKING HEALTH-CARE SERVICES AT A TERTIARY HOSPITAL IN LUSAKA, ZAMBIA.

Abstract

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Citation Style For This Article: Lubeya MK, Chima P, Phiri C, et al. Cervical Cancer Screening Uptake Among HIV Positive Women Seeking Healthcare Services At A Tertiary Hospital In Lusaka, Zambia.. Health Press Zambia Bull. 2020; 4(4); pp 16

Background

Cervical cancer affects the female genital tract and is one of the commonest cancers caused by the Human papillomavirus (HPV). In 2018 alone, approximately 311,000 women died from cervical cancer across the globe, with over 500,00 living with the disease. Zambia has one of the highest age standardised cervical cancer incidence and mortality at 44.6/100000 and 66.3/100000 women years respectively. The disparities in disease occurrences are mainly due to poor implementation and lack of readily available services for cervical cancer screening in many African countries. Additionally, the high burden of HIV sub-Sahara Africa makes women more vulnerable to developing cervical cancer. The Zambia population HIV report of 2018 indicates a national HIV prevalence of 12%; however, when stratified by sex, prevalence is 14.6% in women and 9.3% in men. Zambia has run one of the most successful mass cervical cancer screening programs in sub-Saharan Africa, with a significant focus on HIV positive women since 2006. This study was aimed at understanding the uptake of cervical screening among HIV positive women at a tertiary hospital through a cross sectional study.

Methods

The Vaginal Progesterone (VP) Trial was This was a cross sectional study among women admitted to the medical ward of the Adult hospital of the University Teaching Hospitals in Lusaka, Zambia. Using a structured questionnaire data was collected for social-demographics, cervical cancer practices and social influences.

Results

A total of 268 women aged between 25 and 70 were interviewed. The median age of the participants was 41, majority of the participants were Lusaka residents, 133 (49 %) were HIV positive, while 137 (51%) were HIV negative. Among the participants,116 (43%) had screened for cervical cancer, and of those screened, 77% were HIV positive. In the bivariate analysis, older women (p=0.012), Lusaka residents (0.018) HIV positive women (P<0.0001), those who understood the screening eligibility (0.036), and knew about the Human papillomavirus vaccine(p<0.0001) had significantly higher uptake of screening services. There was no significant association between level of education and occupation. The Anti-retroviral therapy clinic was the most typical source of information on cervical cancer. In multivariate logistic regression, age (OR 1.1, 95% CI 1.0-1.1), knowledge of screening eligibility (OR 1.2, 95% CI 1.06-1.14), and HIV status (OR 15.8, 95% CI 7.2-34.5) remained significant predictors of cervical cancer screening uptake.

Conclusion/Recommendations

Positive women in a medical admission ward are more likely to have screened for cervical cancer; this is an excellent milestone for Zambia considering the increased high risk for this population to die from cervical cancer. However, HIV negative women should also be encouraged to screen as there are other risk factors associated with cervical cancer besides HIV infection. Despite this study being conducted at one tertiary hospital, women came from various parts of the country seeking different medical services; hence results may portray of the national situation.

Keywords: Cervical cancer, HIV, Zambia, uptake, screening, Zambia

Key Messages

1. The complimentary messages on the importance of screening for high-risk HIV positive women are yielding results
2. Efforts to encourage all women to screen regardless of HIV status should continue
3. Cervical cancer screening messages should be intensified in other provinces outside Lusaka

CYTOMEGALOVIRUS AMONG ROTAVIRUS VACCINATED INFANTS IN ZAMBIA AND IMPLICATIONS FOR ROTAVIRUS VACCINE IMMUNOGENICITY.

Abstract

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Citation Style For This Article: Laban N, Goodier M, Bosomprah S, et al. . Cytomegalovirus among rotavirus vaccinated infants in Zambia and implications for rotavirus vaccine immunogenicity . Health Press Zambia Bull. 2020; 4(4); pp 17

Background

Human cytomegalovirus (HCMV) is a -herpes virus endemic in developing countries that can be transmitted congenitally or during early infancy and imparts a life-long persistent infection. HCMV has been shown to modulate cellular immunity in infected individuals and therefore HCMV infection in early infancy has potential to influence the immunogenicity of vaccines administered in the first year of life, including rotavirus vaccines. We aimed to determine HCMV seropositivity in a cohort of mothers and their infants receiving rotavirus vaccination in Zambia.

Methods

We tested available plasma from a total of 82/100 mother-infant pairs enrolled in a randomized controlled trial evaluating two versus three doses of Rotarix®, and from whom infant peripheral blood mononuclear cells were collected, for HCMV seropositivity at infant ages 6-12, 14-18 weeks and 9 months. Plasma was tested for presence of anti-HCMV IgG (indicating past exposure), and IgM (evidence of recent infection or reactivation) using commercially available enzyme-linked immunosorbent assay (ELISA) based kits (Demeditec Diagnostics GmbH, Germany). HCMV seropositivity was defined as presence of anti-HCMV IgG or IgM in plasma at a calculated absorption value higher than that of a cut-off standard containing 10 units/ml of anti-HCMV IgG or IgM provided in the ELISA kit.

Results

A total of 268 women aged between 25 At baseline, 81/82 mothers (98.78%, 95% CI: 93.39%-99.97%) and 44/82 (53.66%, CI: 42.29%-64.75%) were seropositive for anti-HCMV IgG and anti-HCMV IgM respectively. At pre-vaccination, infant age 6-12 weeks, 77/82 (93.9%, CI: 86.34%-97.99%) and 10/82 (12.2%, CI: 6.01%-21.29%) infants were seropositive for anti-HCMV IgG and anti-HCMV IgM respectively. At 14-18 weeks and 9 months infant age time points, anti-HCMV IgG seropositivity reduced to 85.37% (70/82) (CI: 75.83%-92.2%) and 82.28% (65/79) (CI: 72.06%-89.96%) whereas anti-HCMV IgM seropositivity increased to 20.73% (17/82) (CI: 12.57%-31.11%) and 49.37% (39/79) (CI: 37.92%-60.86%) respectively.

Conclusion/Recommendations

We documented high maternal and postnatal HCMV seropositivity in Zambia. We found evidence of infant HCMV infection (anti-HCMV IgM) occurring as early as 6-12 weeks of age prior to receipt of rotavirus vaccination which increased substantially within the first 9 months of life. Given the known dominant effects on cellular immunity, we propose that concomitant infant HCMV infection has the potential to influence immunogenicity of rotavirus vaccines. We will further explore Rotavirus specific T cell immunity and B-cell mediated antibody responses according to the timing of infant HCMV infection in this cohort. Information on HCMV exposure and impact on vaccine responses in infants may provide useful insights towards observed vaccine immunogenicity and the need for infant vaccination against HCMV.

EFFECT OF HIV STATUS AND VITAMIN A ON ORAL CHOLERA VACCINE UPTAKE IN ADULT POPULATION LIVING IN AN ENDEMIC AREA OF LUKANGA SWAMPS, ZAMBIA.

Abstract

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Citation Style For This Article: Luchen C, Mwaba J, Ng'ombe H, et al . Effect of HIV Status and Vitamin A on Oral Cholera Vaccine Uptake in Adult Population Living in an Endemic Area of Lukanga Swamps, Zambia.. Health Press Zambia Bull. 2020; 4(4); pp 18

Background

While Oral Cholera Vaccines (OCV) are known to be effective in the prevention and control of the deadly disease, vaccine uptake and its effectiveness could be affected by several factors. We set out to assess the impact of the human immunodeficiency virus (HIV) and micronutrient deficiency as indicated by serum retinol levels (a proxy for vitamin A) in Luka nga Swamps where OCV was administered to fishmongers during the 2016 outbreak in Zambia.

Methods

HIV testing was done only among consenting participants. The enumeration of percentage and absolute cell counts of CD4+ T lymphocytes was performed on the FACS Calibur instrument while viral load testing was performed using the COBAS®Ampliprep/ COBAS®Taqman® 48 HIV-1 Test, version 2. Vitamin A analysis was performed using the Shimadzu Prominence HCT-2010 High-Performance Liquid Chromatography (HPLC). The plasma vibriocidal antibody assay was used to evaluate the immunogenicity of Shanchol™ OCV against both Inaba and Ogawa cholera strains. 223 participants in the Lukanga Swamps, were enrolled and followed up for 30 months after the administration of the 1st and 2nd doses.

Results

A total of 268 women aged between 25 Out of 223 participants, 47 consented for HIV screening and of these 24 tested positive. HIV - individuals had geometric mean titers (GMTs) of 49.79 against Ogawa and 23.31 against Inaba, while HIV + individuals had GMTs of 10.76 against Ogawa and 7.20 against Inaba. HIV negative participants had higher GMTs compared to the HIV + participants, even though they were not statistically significant. There was a positive association between serum retinol levels and Ogawa GMTs among the HIV- participants at baseline, day 28 and Month 6 while among the HIV + participants this association was positive only at baseline. Against Inaba, there was a significant inverse association between serum retinol levels and GMTs at all time points.

Conclusion

Our study shows that HIV + participants from the Lukanga Swamps had lower vibriocidal antibody titers and responded poorly to the OCV Shanchol™ as compared to the HIV – participants. This is consistent with reported observations from other vaccines in HIV +/- participants. Serum retinol levels do not play a clear role in affecting the immunogenicity of OCV in HIV +/- individuals due to non-consistent patterns observed against the two strains and across different time points.

Recommendations

We recommend that future studies should have larger samples and also investigate other micronutrients such as Zinc which has been reported to affect vaccine uptake. Another recommendation is that future studies try to have short blood sampling timelines as opposed to the ones our study which had logistical feasibility challenges.

FACTORS ASSOCIATED WITH MALARIA TRANSMISSION; A COMPARATIVE STUDY OF MUNYUMBWE AND SOMPANI RURAL HEALTH CENTRES IN GWEMBE DISTRICT, ZAMBIA.

Abstract

By : M Malasa

Citation Style For This Article: Malasa M . Factors associated with malaria transmission; a comparative study of Munyumbwe and Sompani Rural Health Centres in Gwembe district, Zambia. . Health Press Zambia Bull. 2020; 4(4); pp 19

Background

Malaria remains a major public health problem in Zambia. Malaria hotspots pose a challenge to attaining malaria elimination by 2021. Identifying predictors of malaria in hotspots and geographically adjacent areas might reveal important information about how to achieve this goal. Munyumbwe and Sompani Rural Health Centres (RHCs) in Southern Province have been receiving the same intervention package since 2014, yet malaria incidence in 2019 were 6/1000 and 117/1000, respectively. We investigated factors associated with malaria transmission in these two RHC catchment areas.

Methods

A cross-sectional study was undertaken at Munyumbwe and Sompani RHCs, where a pre-tested structured questionnaire was administered to 340 consenting participants tested for malaria during January-February 2020. Data collected included: age; education level; malaria knowledge; insecticide treated nets (ITN) possession and use; indoor residual spraying (IRS); travel history; index case follow-up; outdoor activities; and presence of stagnant water. Multiple logistic regression analysis was done using Stata

Results

At Sompani RHC, 50% (85/170) of participants had malaria during January-February 2020 compared to Munyumbwe with 5.9% (10/170) (AOR=0.22; p=0.004). Travelling outside the district at Sompani was associated with malaria (AOR=29.5; p<0.0001). In both areas, participants who utilized ITNs had reduced odds of acquiring malaria than those who never utilized (Munyumbwe: AOR=0.03 p=0.042; Sompani: AOR=0.11, p=0.006). Index case follow-up was lower in Sompani (6%) than Munyumbwe (90%) (p<0.0001)

Conclusion /Recommendation

Travelling outside the district for Sompani was a unique predictors of malaria. Most people who had malaria in Sompani reported to have travelled to high malaria burden areas. Additionally, only a minority of index cases were followed up in Sompani, in contrast to Munyumbwe. Providing malaria prophylaxis to travelers and strengthening index case follow-up are potential strategies to control malaria in Sompani and possibly elsewhere in Zambia.

HEPATITIS B AND C SCREENING DURING THE 2019 WORLD HEPATITIS DAY AT COSMOPOLITAN MALL IN LUSAKA, ZAMBIA

Abstract

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Citation Style For This Article: Phiri TN, Musukuma-Chifulo K, Simuyandi M, et al . Hepatitis B and C Screening During the 2019 World Hepatitis Day at Cosmopolitan Mall in Lusaka, Zambia. . Health Press Zambia Bull. 2020; 4(4); pp 20

Background

Viral hepatitis is the leading cause of liver cirrhosis and liver cancer in Africa. The prevalence of chronic hepatitis B virus (HBV) infection in the Zambian population is around 3.5 % (0-59 years) and can be as high as 12.3% in the HIV positive adult population whilst that of the hepatitis C virus (HCV) is <1%. Most cases of Fibrosis, Cirrhosis, and Hepatocellular carcinoma are caused by HBV and HCV. Most people that have viral hepatitis especially type B and C may not know until they have developed liver disease.

Methods

On the 28th of July 2019, Zambia celebrated the World Hepatitis Day, a day that saw the screening of 148 individuals at Cosmopolitan Mall in Lusaka for both hepatitis B surface antigen (HBsAg) and hepatitis C antibodies. This was done using the ALLTEST Rapid Diagnostic Test kits (manufactured by AllBIOTECH). Demographic information and general knowledge of hepatitis B data were collected using a pre-tested data capture form. All data collected was presented in tables and analysed using STATAä, version 14.

Results

Though 61% of the participants had heard about hepatitis B, very few knew their HBV status (16.0%), and only 7.7% were vaccinated. Occupation (p = 0.001) and education (p = 0.002) were significantly associated with knowledge of HBV while there was no association between vaccination status and ever been tested with any factors assessed. The majority of our participants were female and only 4 (4.3%) tested positive for HBsAg, and none was positive for HCV. All hepatitis B positives were male aged between 35 and 45 years. All were married except 1; two were self-employed and one was in informal employment. One was co-infected with HIV whereas the other three had HBV only. All were asymptomatic and previously unaware of their infection. All three mono-infected individuals had normal Full Blood Count (FBC), as well as the Liver Function Test (LFT) results. However, the abdominal ultrasound that was done in one showed mild fibrosis.

Conclusion /Recommendation

In conclusion, these findings are suggestive of a lack of sensitization and awareness, low rates of HBV screening, and vaccination. Only males were positive despite testing more females. While this is possible because of a small and potentially biased sample, the male sex has been linked to higher HBV positivity than females. It is also of great public health importance as they were all asymptomatic and potentially infectious and at risk of developing liver complications. There is a need for frequent screening for both HCV and HBV and making HBV vaccines available and affordable .

Up to five keywords; Prevalence; Hepatitis B and C; World hepatitis day; general population; knowledge

HEPATITIS B VIRUS AMONG HEALTH CARE WORKERS: EXPOSURE, PREVALENCE, AND PREDICTORS OF A LIFETIME AND CURRENT INFECTION IN A COHORT FROM KALULUSHI DISTRICT, ZAMBIA

Abstract

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Citation Style For This Article: Musukuma-Chifulo K. Phiri TN, Simuyandi M, et al. Hepatitis B virus among health care workers: exposure, prevalence, and predictors of a lifetime and current infection in a cohort from Kalulushi District, Zambia. Health Press Zambia Bull. 2020; 4(4); pp 21

Background

Infection with the Hepatitis B virus (HBV) among health care workers (HCWs) is an occupational hazard that can be mitigated against by HBV vaccination which offers ~90-95% protective efficacy when combined with other preventive measures. Exposure to the virus elicits an antibody response which when sufficient can prevent infection. On the other hand, antibodies to the core antigen serve as a marker of lifetime infection (i.e., if ever exposed), while an acute or chronic infection is marked by the detection and presence of the surface antigen. However, the level of exposure and risk factors are currently not understood in our setting that would allow for vaccine introduction in HCWs. We thus set out to evaluate the exposure, prevalence, and describe the predictors of lifetime and current infection of HBV amongst HCWs.

Methods

We recruited a cohort of consenting HCWs across 23 health facilities and two nursing schools from Kalulushi District, Copperbelt Province, Zambia. Current or previous infection with HBV was determined by the detection of surface antigen (HBsAg), core antibody (anti-Hbc), and surface antibody (anti-HBs) using established enzyme-linked immunosorbent assay (ELISA) methods. All HBsAg positive volunteers were referred for clinical care. Social demographic characteristics [age, sex, institution type, and category of staff] were collected for each participating HCW. All categorical variables were summarised using proportions. Chi-Square or Fisher's exact test was used to test for association between the volunteer's social demographic characteristics, and HBsAg, and anti-HBc status. In addition, univariate and multivariate logistic regression was used to determine risk factors of HBsAg and anti-HBc status. All statistical analysis was done using STATA version 16.0 and statistical significance was set at $p< 0.05$.

Results

A total of 673 HCWs were recruited to participate in the study. The median age was 28 (IQR: 24-36) with the majority being female (72.4%, 487/673). Out of these, 15.5% (104/673) were not included in the analysis due to missing demographic or volunteer characteristic data. Majority of the volunteers were from the general hospital (34.1%, 194/569) whilst 29.7% (169/569) were from the nursing school; 13.7% (78/569) from health posts and 22.5% (128 /569) from health centres with the majority of these being students (24.1%, 137/569); 47.5% (270/569) medical staff; and 28.5% (162/569) support staff. For Hepatitis B exposure, 66.8% (380/569) were anti-HBc positive while 4.6% (26/567) were HBsAg positive. Using the cut-off of 10 IU/ml, 79.8% (454/569) were eligible for vaccination. A health care worker was more likely to have higher exposure to Hepatitis B as determined by anti-HBc, if they were a student [OR 1.8(95%CI 1.1-2.9) p =0.012] in the univariate analysis, however, this was not significant in the adjusted model.

Conclusion /Recommendation

Lifetime HBV infection is high among HCWs, similar to previous reports in the region; however, only a minority of individuals, regardless of prior HBV infection, have immunity based on antibody concentration. Following from this, the program will provide vaccination and describe the profile of antibody responses post-vaccination, and implementation outcomes to inform a national scale-up of HBV testing, treatment, and prevention for Zambian HCWs.

IDENTIFICATION OF CHOLERA HOTSPOTS IN ZAMBIA: A SPATIOTEMPORAL ANALYSIS OF CHOLERA DATA FROM 2008 TO 2017

Abstract

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Citation Style For This Article: Mwaba J,Debes AK, Shea P, et al. Identification of Cholera Hotspots in Zambia: A Spatiotemporal Analysis of Cholera Data from 2008 to 2017 Health Press Zambia Bull. 2020; 4(4); pp 22

Background

The global burden of cholera is increasing, with the majority (60%) of the cases occurring in sub-Saharan Africa. In Zambia, widespread cholera outbreaks have occurred since 1977, predominantly in the capital city of Lusaka. During both the 2016 and 2018 outbreaks, the Ministry of Health implemented cholera vaccination in addition to other preventative and control measures, to stop the spread and control the outbreak. Given the limitations in vaccine availability and the logistical support required for vaccination, oral cholera vaccine (OCV) is now recommended for use in the high risk areas ("hotspots") for cholera. Hence, the aim of this study was to identify areas with an increased risk of cholera in Zambia.

Methods

Retrospective cholera case data from 2008 to 2017 was obtained from the Ministry of Health, Department of Public Health and Disease Surveillance. The Zambian Central Statistical Office provided district-level population data, socioeconomic and water, sanitation and hygiene (WaSH) indicators. To identify districts at high risk, we performed a discrete Poisson-based space-time scan statistic to account for variations in cholera risk across both space and time over a 10-year study period. A zero-inflated negative binomial regression model was employed to identify the district level risk factors for cholera. The risk map was generated by classifying the relative risk of cholera in each district, as obtained from the space-scan test statistic.

Results

In total, 34,950 cases of cholera were reported in Zambia between 2008 and 2017. Cholera cases varied spatially by year. During the study period, Lusaka District had the highest burden of cholera, with 29,080 reported cases. The space-time scan statistic identified 16 districts to be at a significantly higher risk of having cholera. The relative risk of having cholera in these districts was significantly higher and ranged from 1.25 to 78.87 times higher when compared to elsewhere in the country. Proximity to water bodies was the only factor associated with the increased risk for cholera ($P<0.05$).

Conclusion /Recommendation

This study provides a basis for the cholera elimination program in Zambia. Outside Lusaka, the majority of high risk districts identified were near the border with the DRC, Tanzania, Mozambique, and Zimbabwe. This suggests that cholera in Zambia may be linked to movement of people from neighbouring areas of cholera endemicity. A collaborative intervention program implemented in concert with neighbouring countries could be an effective strategy for elimination of cholera in Zambia, while also reducing rates at a regional level.

IDENTIFYING BARRIERS TO ACCESSING HEALTH SERVICES: DETENTION PERIOD FOR JUVENILE OFFENDERS IN ADULT CORRECTIONAL FACILITIES ZAMBIA

Abstract

By : M Thornicroft, M Kagujje, K Tamiwe, T Zgambo, S Hatwiinda, S Nyangu, C Mooga , M Muyoyeta

Citation Style For This Article: Thornicroft M, Kagujje M, Tamiwe K, et al. Identifying Barriers to Accessing Health Services: Detention Period For Juvenile Offenders In Adult Correctional Facilities Zambia. Health Press Zambia Bull. 2020; 4(4); pp 23

Background

The juvenile act of the laws of Zambia stipulates that as much as possible, authorities should avoid detention of juveniles and if juveniles are detained, as much as possible, they should be prevented from associating with adults who are charged with an offence. Juveniles in conflict with the law in Zambia are detained in adult correctional facilities before they are ordered (sentenced). Detention in adult correctional facilities which are often overcrowded not only exposes juveniles to certain criminal behaviour but also increases their risk for sexual abuse, mental health disorders, malnutrition and infectious diseases including HIV and TB. A survey was conducted to understand the average period of detention of juveniles in adult correctional facilities and the reasons for delayed transfer to juvenile appropriate facilities.

Methods

Data was collected from 10 correctional facilities as part of the baseline assessment by the Elton John AIDS Foundation EJJOH project. A desk review of admission files was done to determine the average detention period in adult correctional facilities. 224 juveniles aged between 14 and 19 were interviewed in the presence of a correctional officer to understand the reasons why they were still detained in adult correctional facilities.

Results

IA total of 224 juveniles were found in adult correctional facilities. The juvenile detention period in adult correctional facilities ranged from 54- 1,324 days. Of the juveniles interviewed, 130 (58%) had delayed High Court confirmations for 6 months or longer, 38 (17%) lost documentation or transferred from other districts without the necessary documentation, 20 (9%) had been waiting for transfer to Reformatory/ Approved schools for 6 months or longer, 26 (12%) awaiting trial or committal to high court, 10(4%) had no guardian/ Social Welfare representation during hearings, no witnesses, age determination reports.

Conclusion

Juveniles stay in adult correctional facilities for extended durations; the factors contributing to prolonged detention in adult correctional facilities are primarily system factors. Without these factors being addressed, prolonged stay of juveniles in adult correctional facilities will continue to be a structural barrier to accessing appropriate health services

Recommendation

- Juvenile offenders should be given alternative corrective measures without incarceration
- Correction services should have deliberate health policies for incarcerated juveniles
- Juvenile offenders should be separated from adult inmates at all costs

Key words: Juvenile, Detention period, barriers to health services, Correctional service

TITLE: IMPACT OF PCV10 IN CHILDREN <5 YEARS HOSPITALIZED FOR BACTERIAL MENINGITIS AT THE CHILDREN'S HOSPITAL, LUSAKA, ZAMBIA, 2010-2019

Abstract

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Background

Invasive Bacterial Diseases (IBDs) are still a public health concern in Africa, causing childhood morbidity and mortality despite the availability of vaccines. We investigated the characteristics of aetiological agents causing IBDs in children M5 years in the pre- and post-vaccination period in Zambia.

Methods

Identification of Streptococcus pneumoniae (Spn), Haemphilus influenzae (Hi) and Neisseria meningitidis (Nm) from cerebrospinal fluid (CSF) was achieved by microscopy, culture, antigen detection and chemistry analysis. Real-time polymerase chain reaction (RT-PCR) was performed on positive samples for the detection/confirmation of Spn, Hi and Nm with serotyping (Spn, Hi) and serogrouping (Nm).

Results

During the period of review (2010-2019), 3810 suspected, 658 probable and 231 confirmed bacterial meningitis cases were reported. Spn, Nm, and Hi accounted for 65% (151/231), 20% (45/231) and 15% (35/231) respectively. Pneumococcal serotypes included PCV10 serotypes 52% and non-PCV10 serotypes 48% of which 14% were PCV13 serotypes and 34% non-vaccine serotypes (NVS). Of note is the 20% reduction in confirmed S. pneumoniae 60% (90/151) in the pre-vaccination period (2010-2014) to 40% (61/151) in the post vaccination period (2014-2019) and a decrease in PCV10 serotypes from 77% (36/47) to 23% (11/47). All serotyped Nm and Hi belonged to serogroup W and H. influenzae type b respectively. Reduced pneumococcal susceptibility to penicillin 67% and ceftriaxone 98% was observed.

Conclusion/ Recommendation

There was a decrease in the frequency of pneumococcal bacterial meningitis and PCV10 serotypes in the post vaccination period. However, the Spn and Nm serotype/serogroup replacement and the increased penicillin resistance warrants for continued surveillance to inform and guide treatment and vaccination policies, the introduction of PCV13 in our setting and strengthening vaccination programs.

INCIDENCE AND CLINICAL PRESENTATION OF CONGENITAL SYPHILIS, IN A ROTAVIRUS VACCINE COHORT STUDY IN LUSAKA: A CASE SERIES REPORT

Abstract

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Citation Style For This Article: Sukwa N, Simuyandi M, Chirwa M, et al .Incidence and clinical presentation of Congenital Syphilis, in a Rotavirus vaccine cohort study in Lusaka: a case series report. The Health Press Zambia Bull. 2020; 4(4); pp 25

Background

Despite an otherwise robust national antenatal clinic program, Maternal and congenital syphilis remains an important public health issue in Zambia. This case series reports the clinical presentation of seven infants diagnosed with Congenital Syphilis in Lusaka, Zambia.

Methods

The cases in this series were incidental findings from a cohort of infants enrolled in a rotavirus vaccine immunogenicity study recruiting infants at 6 weeks of age. As part of clinical care for enrolled participants, we screened mothers of children who presented with adverse events of (i) repeated upper respiratory tract infections/coryza, (ii) skin lesions, and (iii) poor weight gain, for syphilis using Rapid Plasma Reagin (RPR) test.

Results

From a cohort of 214 mother-infant pairs enrolled between September and December 2018, a total of 115 (44.4%) of the mothers reported to have not been screened during antenatal care. Of these, 4 (3.5%) reported to have tested positive; and only two received treatment. Seven out of 57 (26.6%) children meeting the screening criteria had a positive RPR test result. The mean age at diagnosis was 4.5 months (1.3 SD), and the common presenting features included: coryza (6/7), skin lesions (4/7), conjunctivitis (3/7), pallor/anaemia (5/7), wasting (2/7), and 5/7 were under weight. Regarding maternal HIV infection, 3 of the 7 infants (3/7) were exposed to HIV. Following diagnosis all 7 cases received standard treatment according to national treatment guidelines i.e. 6/7 cases received in patient care with benzylpenicillin for ten days, while 1/7 was treated as an outpatient and received daily procaine penicillin for ten days.

Conclusion/ Recommendation

These findings suggest that though screening for syphilis is part of the standard of care for antenatal in Zambia, it is not offered optimally. There is urgent need to address programmatic shortcomings in syphilis screening and treatment to avoid long term sequelae. Additionally, Clinicians need to raise their index of suspicion and rule out syphilis when confronted with these clinical symptoms regardless of the mother's HIV status.

OUTBREAK OF CIRCULATING VACCINE DERIVED POLIO VIRUS TYPE-2 CHIENGE DISTRICT, LUAPULA PROVINCE, ZAMBIA, SEPTEMBER 2019

Abstract

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Background

Africa has seen a significant rise in circulating vaccine-derived polioviruses type 2 DPV2) outbreaks following the switch to bivalent oral polio vaccine (bOPV) in 2016. In September 2019, the World Health Organisation (WHO) country office notified the Zambian Ministry of Health of a case of VDPV-2 in Chienge District, Luapula Province. This paper describes the investigation and public health response.

Methods

An Investigation was conducted per WHO standard operating procedures, where cVDPV is defined as VDPV demonstrating person-to-person transmission in the community or evidence from human and/or environmental detections of related viruses. The patient's grandmother and mother were interviewed and blood samples were collected from the patient . Furthermore, 36 stool samples were collected from direct and community contacts of the patient aged <5 years from the two villages where the patient resided. Genetic sequencing for intratypic differentiation was used to determine relatedness of poliovirus samples.

Results

The patient was an unvaccinated two-year-old boy of Chienge District bordering the Democratic Republic of Congo (DRC); he had spent time in both countries, although his last trip to DRC was over 1 year ago. History indicated the patient developed sudden weakness in his lower limbs following a fever of <24hours in July. The sequencing results of the case showed VDPV2 with nine nucleotide differentiation from Sabin-2. Of the 36 stool samples, three isolated polioviruses (one Sabin-like-type 1 and two poliovirus-type 2[PV2]). The sequencing results of the two PV2 indicated genetic linkage to the index case but no established link to any ongoing cVDPV2 outbreaks in the DRC.

Conclusion

The confirmed presence of cVDPV2 outbreak in Zambia represents another novel emergence of cVDPV2 since switching to bOPV. A mass vaccination campaign with monovalent OPV2 has been completed in Luapula Province following this outbreak. Furthermore, a catch-up vaccination was conducted in June 2020 countrywide to provide IPV coverage among children aged 3 to 59 months old children who missed type 2 containing polio vaccine from 2015 to March 2020.

Recommendation

ollowing this outbreak and the finding above we recommend strengthening AFP surveillance systems in rural-border towns with limited environmental surveillance, the establishment of more environmental surveillance sites within the country to investigate the presence of polioviruses in wastewater samples which would indicate the presence of polioviruses in those communities. Furthermore, we recommend improving vaccination coverage for both bivalent Oral Polio Vaccine (bOPV) and Inactivated Polio Vaccine (IPV) in all areas of the country to prevent further outbreaks of VDPV.

PRELIMINARY ASSESSMENT OF URANIUM CONTAMINATION IN DRINKING WATER SOURCES IN THE VICINITY OF URANIUM MINE IN SIAVONGA DISTRICT, ZAMBIA AND THE ASSOCIATED HEALTH RISKS

Abstract

By : T Haakonde

Citation Style For This Article: Haakonde T. Preliminary Assessment of Uranium Contamination in Drinking Water Sources in the Vicinity of Uranium Mine in Siavonga District, Zambia and the Associated Health Risks. The Health Press Zambia Bull. 2020; 4(4); pp 27

Background

Contamination of drinking water by Uranium (U) has attracted global attention owing to its chemical toxicant and radio- toxicant behaviour in humans. Concentrations of U in water were assessed and health risks due to exposure through consumption of contaminated were determined.

Methods

In the current study, 120 drinking water samples collected from different water sources in some parts of Siavonga District in Zambia were measured using inductively coupled plasma mass spectrometry. United States Environmental Protection Agency (USEPA) deterministic risk approaches were used to determine the health risks associated with exposure to U through the consumption of contaminated water.

Results

The mean concentration of U in water sources showed the decreasing trend: streams (135.30×g/L) > dams (115.62×g/L) > boreholes (111.31 ×g/L) > shallow wells (110.03 ×g/L). The levels of U in all the samples exceeded the safe limit for drinking water recommended by WHO indicating that the water in the studied area is not safe for drinking and cooking purposes. The estimated chronic daily intakes of U through water consumption showed the decreasing order: streams (3.62 ×g/kg- bw/day) > dams (2.79 ×g/kg- bw/day) > boreholes (2.68 ×g/kg- bw/day) > shallow well (2.65 ×g/kg- bw/day). Equally, the current study showed that the mean target hazard quotients (THQ) in all water samples exceeded the safe limit (THQ > 1) implying that the consumers of such water were at a greater risk of potential health effects. The carcinogenic risks from U at most of the drinking water sources were higher than acceptable ranges (10-6), indicating an increased risk of cancer for the population in the study area.

Conclusion

The current levels of U in drinking water sources stretching from the shores of Lake Kariba to Chirundu- Siavonga Border in Siavonga district in the Southern Province of Zambia implies that the condition is much frightening and severely affecting humans, animals and aquatic life.

PREVALENCE AND CORRELATES OF DEPRESSIVE SYMPTOMS AMONG ADOLESCENTS IN A POPULATION WITH HIGH PREVALENCE OF TB/HIV IN ZAMBIA AND SOUTH AFRICA: HPTN 071 (POPART) FOR YOUTH STUDY.

Abstract

By : K Shanaube

Citation Style For This Article: Shanaube K. Prevalence and correlates of depressive symptoms among adolescents in a population with high prevalence of TB/HIV in Zambia and South Africa: HPTN 071 (PopART) for Youth study.. The Health Press Zambia Bull. 2020; 4(4); pp 28

Background

Mental health is a critical and neglected public health challenge for adolescents in sub-Sahara Africa (SSA). Poor mental health accounts for a large proportion of the disease burden among adolescents. Data on potential risk factors of depression among HIV-infected and uninfected adolescents in SSA are scarce. The study, aimed at determining the prevalence and correlates of depressive symptoms among adolescents aged 15-19 years in 7 control communities of the HPTN071 (PopART) trial (4 in Zambia and 3 in South Africa (SA).

Methods

A cross-sectional survey was done from August-November 2017 enrolling approximately 1400 adolescents, 200-350 from each community. Communities were subdivided into blocks, each block consisted on average 50 (~40-60) households in Zambia and 80 (~70-90) households in SA. Blocks visited were randomly assigned to the study. All households within a sampling block and all adolescents aged 15-19 years residing in these households were eligible for inclusion. Written informed consent was obtained. The questionnaire was self-administered for the mental health section. HIV status was self-reported. Depression was measured by a 13-questions self-administered short Mood and Feelings Questionnaire (SMFQ). Each individual was scored by summing the 13 questions and a U12 cutoff of the scale response (0-26) was used to determine underlying depressive symptoms. To determine the correlates of depressive symptoms, a binomial regression model was fitted in addition a subgroup analysis among those who self-reported to have engaged in sexual intercourse was done. Sensitivity analysis was done for different outcome definitions.

Results

On average, 15-17 blocks with 15-22 adolescents per community were visited in Zambia and SA. A total of 1,453 and 667 adolescents in Zambia and SA respectively were administered the SMFQ and overall responses recorded. Overall the prevalence of depressive symptoms was 432/1453; 29.7% (95% Confidence-Interval [CI]: 27.4%-32.2%) in Zambia and 152/667; 22.8% (95% CI: 19.7%-26.2%) in SA.

Community, sex, sexual intercourse and having Presumptive-Tuberculosis (PrTB) symptoms were identified as correlates of depressive symptoms across the two countries with HIV-related stigma being specific to Zambia. After adjusting for potential confounders; there were differences in odds of depression among communities. In Zambia adolescent girls were at least one and a half times more likely to experience depressive symptoms compared to boys (Odds ratio (OR)=1.58 (95%CI:1.23-2.02, p-value<0.0001). In SA, adolescents with PrTB symptoms were twice more likely to experience depressive symptoms (OR=2.25(95%CI: 1.51-3.37), p-value<0.0001), however, there was borderline evidence in Zambia (OR=1.28 (95%CI:1.0-1.65), p-value=0.05).

Adolescents who reported use of alcohol/drugs during their last sexual encounter were twice more likely to experience depressive symptoms in both countries (Zambia: OR=1.96 (95%CI:1.08-3.56), p-value=0.027; SA: OR=2.67(95%CI:1.29-5.54), p-value=0.008) as were those who did not use condoms (OR=2.29(95%CI:1.29-4.07), p-value=0.005) in SA. There was borderline evidence of depressive symptoms among adolescents who reported HIV-related stigma (OR=1.41 (95%CI: 1.09-1.82), p-value=0.009) in Zambia. Sensitivity analysis showed that the prevalence and correlates of depressive symptoms changed with change of the cut-off points.

Conclusion

Depressive symptoms among adolescents seem to be associated with sexual and reproductive health related issues and risk factors are different by country.

PROGRESS TOWARDS ELIMINATING MOTHER-TO-CHILD TRANSMISSION OF HIV IN MACHA AREA IN ZAMBIA FROM 2010-2020; A CROSS SECTIONAL STUDY

Abstract

By : M Hamahuwa

Citation Style For This Article: Hamahuwa M. PProgress towards eliminating mother-to-child transmission of HIV in Macha area in Zambia from 2010-2020; a cross sectional study. The Health Press Zambia Bull. 2020; 4(4); pp 29

Background

Scaling up prevention of mother-to-child transmission of HIV (PMTCT) services is important in achieving national targets as well as global targets for 90% coverage and less than 5% mother-to-child transmission of HIV. Generally there has been improvement in coverage of antiretroviral therapy (ART) among HIV-infected pregnant women across regions, particularly in the African region where the majority of HIV-infected women reside. At a national level, the improvement in PMTCT coverage among HIV-infected pregnant women, increase in the proportion of infants receiving HIV prophylaxis and being tested, and the decrease in the number of infants infected with HIV has been well documented. However, fewer studies have been done at a local level. To address this gap, an assessment on the improvement in PMTCT coverage in the Macha area was done.

Methods

A cross-sectional survey was done fCross-sectional studies were conducted from August 2010 to March 2013 (DBS study), April 2013 to October 2015 (EID study) and February 2016 to March 2020 (NSEBA study) of HIV-infected mothers bringing their infants for early infant diagnosis at Macha Hospital. All mothers bringing their infants to either the ART clinic or the primary health center associated with the hospital were eligible for enrollment. For the DBS study a chart review was conducted and data were abstracted from the laboratory log books for all the dried blood samples that were collected. For the EID and NSEBA studies, a questionnaire was administered to the mother after enrollment to collect demographic information and a chart review was done.

Results

On average, 15-17 blocks with 15-22 1,259 mother-infant pairs were enrolled and included in this analysis. The median age of the infants at their first HIV DNA test was 6 months. The majority of the mothers (85%) and infants (75%) received antiretroviral drugs to prevent mother-to-child transmission of HIV. The proportion of mothers that received the combination ART increased from 28% in 2010 to 91% in 2020. From 2010-2020, 103 (8%) infants tested positive for HIV. The proportion of infants testing positive decreased from 12% in 2010-2013 to 4% in 2016-2020 (P< 0.0001). The proportion of infants who tested positive differed significantly by maternal receipt of PMTCT. Among infants whose mothers did not receive any PMTCT, 38% tested positive compared to 2% among infants whose mothers received cART for PMTCT (P<0.0001).

Conclusion/ Recommendation

Comparing the data collected at different time periods in the Macha area indicates that there was significant improvement in preventing mother-to-child transmission of HIV from 2010 to 2020. Over the period of the studies, the proportion of mothers receiving cART regimens and the proportion of infants receiving HIV prophylaxis increased, leading to a decrease in the proportion of infants becoming infected with HIV. To continue with these gains, a concerted focus will be needed to target and improve on the integration of new guidelines into clinical practice at a facility level.

RESPIRATORY SYNCYTIAL VIRUS SEASONALITY ACROSS THREE COHORTS IN ZAMBIA

Abstract

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Citation Style For This Article: Mwananyanda L, Nakazwe R, MacLeod W, et al. Respiratory Syncytial Virus seasonality across three cohorts in Zambia The Health Press Zambia Bull. 2020; 4(4); pp 30

Background

Respiratory Syncytial virus (RSV) is among significant causes of lower respiratory tract infections with high morbidity, hospitalization and mortality in infants and young children. Globally, it affects 60 – 70% of children before the age of 1 year. With regard to prevention, diagnosis and treatment of RSV, it is important to understand the timings of the RSV outbreaks in local settings. Especially now that all efforts are focusing on having an approved maternal vaccine for RSV to passively immunize the newborns. We looked at the trends in the seasonality of RSV in infants and/or children from three studies that measured RSV via nasopharyngeal swabs over a period of 8 years in Lusaka, Zambia.

Methods

We present data from three respiratory disease studies conducted in Lusaka from October 2011 to December 2018. These studies took nasopharyngeal swab samples (NPS) from a combination of sick and healthy infants and/or young children. The NPS were tested for the presence of RSV using PCR. We recorded counts of samples positive for the calendar month that the sample was taken.

Results

The positivity of RSV was high in the rainy season from December to April averaging 26 cases per month with high peaks being in February and April at 35 and 34 cases respectively. The cool-dry season in the months of May to August recorded a lower average of 19 cases per month. The hot-dry season months of September to November had the lowest RSV positivity with1.3 cases per month.

Conclusion/ Recommendation

These findings demonstrate that there are indeed seasonality of RSV activity in Zambia that is during the rainy and the cool-dry seasons. This knowledge is important for informing public health initiatives to effectively manage RSV. Targeted passive immunization of RSV can be planned immediately before the RSV seasons for third trimester pregnant women, when the vaccine is available in Zambia.

SERO-PREVALENCE OF ARTHROPOD-BORNE VIRUS INFECTIONS AMONG LUKANGA SWAMP RESIDENTS IN ZAMBIA.

Abstract

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Citation Style For This Article: Chisenga C, Bosomprah S, Musukuma K, et al. Sero-prevalence of arthropod-borne virus infections among Lukanga swamp residents in Zambia. The Health Press Zambia Bull. 2020; 4(4); pp 31

Background

The re-emergence of vector borne diseases affecting millions of people in recent years has drawn attention to arboviruses globally. Here, we report on the sero-prevalence of chikungunya virus (CHIKV), dengue virus (DENV), mayaro virus (MAYV) and zika virus (ZIKV) in a swamp community in Zambia.

Methods

We collected blood and saliva samples from residents of Lukanga swamps in 2016 during a mass-cholera vaccination campaign. Over 10,000 residents were vaccinated with two doses of Shanchol™ during this period. The biological samples were collected prior to vaccination (baseline) and at specified time points after vaccination. We tested a total of 214 baseline stored serum samples for IgG antibodies against NS1 of DENV and ZIKV and E2 of CHIKV and MAYV on ELISA. We defined sero-prevalence as the proportion of participants with optical density (OD) values above a defined cut-off value, determined using a finite mixture model.

Results

Of the 214 participants, 79 (36.9%; 95% CI 30.5–43.8) were sero-positive for Chikungunya; 23 (10.8%; 95% CI 6.9–15.7) for Zika, 36 (16.8%; 95% CI 12.1–22.5) for Dengue and 42 (19.6%; 95% CI 14.5–25.6) for Mayaro. Older participants were more likely to have Zika virus whilst those involved with fishing activities were at greater risk of contracting Chikungunya virus. Among all the antigens tested, we also found that Chikungunya saliva antibody titres correlated with baseline serum titres (Spearman's correlation coefficient = 0.222; p = 0.03).

Conclusion

Arbovirus transmission is occurring in Zambia. This requires proper screening tools as well as surveillance data to accurately report on disease burden in Zambia.

Recommendation

The success of the trial phase lead to the need to expand the technology to other services provides in the other units and wards that have a high demand of laboratory reports.

Use of technology in service delivery is the future for better serve delivery.

Abstract

By : P Sinywimaanzi

Citation Style For This Article: Sinywimaanzi P. Surveillance for respiratory infections in Macha, Zambia. The Health Press Zambia Bull. 2020; 4(4); pp 32

Background

Respiratory infections, including from influenza viruses and respiratory syncytial virus (RSV) are well-established causes of global morbidity and mortality. While southern Africa experiences among the highest mortality rates from respiratory infections, the burden and epidemiology of viral disease in rural areas is marginally understood.

Methods

We established a hospital-based surveillance program for influenza viruses and RSV in Macha, Zambia in 2018. Outpatients and inpatients presenting with influenza-like illness (ILI) were enrolled in the study. At enrollment, a questionnaire was administered and samples were collected and tested for influenza and RSV using the GeneXpert Xpress Flu/RSV assay at Macha Research Trust and other viruses using the BioFire FilmArray EZ panel at Johns Hopkins University. Participants were prospectively followed to assess clinical course. In May 2020, testing for SARS-CoV-2 was incorporated into the surveillance program.

Results

30,111 outpatients were screened between December 2018 and May 2020, and 16.1% presented with ILI. About 723 outpatients with ILI were enrolled in the study. 553 inpatients admitted for a respiratory illness were screened for ILI and 137 were enrolled in the study. In the first year of surveillance (December 2018 to December 2019), influenza viruses and RSV were detected in 18% (13% influenza A and 5% influenza B) and 11% of participants with ILI, respectively. Of influenza A viruses, 29% were H1N1 and 67% were H3N2. For Influenza Jul-Sep 2019 and RSV Jan-Apr 2019 prevalence peaks which were temporally distinct. Additional viruses detected among participants with ILI in the first year included rhinovirus (26%), coronavirus (6%, not SARS-CoV-2), adenovirus (3%), parainfluenza (2%), and metapneumovirus (1%). Overall, 6% of participants were infected with multiple respiratory pathogens. In the second year of surveillance (December 2019 to May 2020), no cases of influenza or RSV have been detected.

Conclusion

This rural population in southern Zambia bears a sizeable burden of viral respiratory infections and severe respiratory disease. The prevalence and seasonal presentation of these infections in rural areas differs from that previously reported from urban areas.