

Vaccination choléra en contexte épidémique: retour d expérience à Mayotte en 2024

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Déclaration d'intérêt de 2014 à 2023

- Intérêts financiers : aucun
- Liens durables ou permanents : aucun
- Interventions ponctuelles : aucune
- Intérêts indirects : aucun

La base de données publique Transparence - Santé

La base de données publique Transparence - Santé rend accessible les informations concernant les conventions, les rémunérations et les avantages liant les entreprises et les acteurs du secteur de la santé. Pilotée par le Ministère des Solidarités et de la Santé, cette initiative de transparence vise à préserver la nécessaire relation de confiance entre les citoyens, les usagers et les multiples acteurs du système de santé. Ce sont les entreprises qui déclarent les informations publiées.

Pour consulter ces informations, vous pouvez :

- Utiliser la recherche rapide : saisissez le nom d'un bénéficiaire ou d'une entreprise dans la barre de recherche ci-dessous,
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Catégorie du bénéficiaire

Profession du bénéficiaire

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Bénéficiaires (0 résultat)

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Il n'y a pas de résultats pour votre recherche.

Plan de l'exposé

- ❖ Choléra à Mayotte : pourquoi ?
 - Le choléra
 - Les quartiers informels
 - Dynamique de l'épidémie
- ❖ Stratégie de lutte
- ❖ Les vaccins disponibles
 - Les différents vaccins
 - Les études d'efficacité
- ❖ Choix stratégiques et recommandations

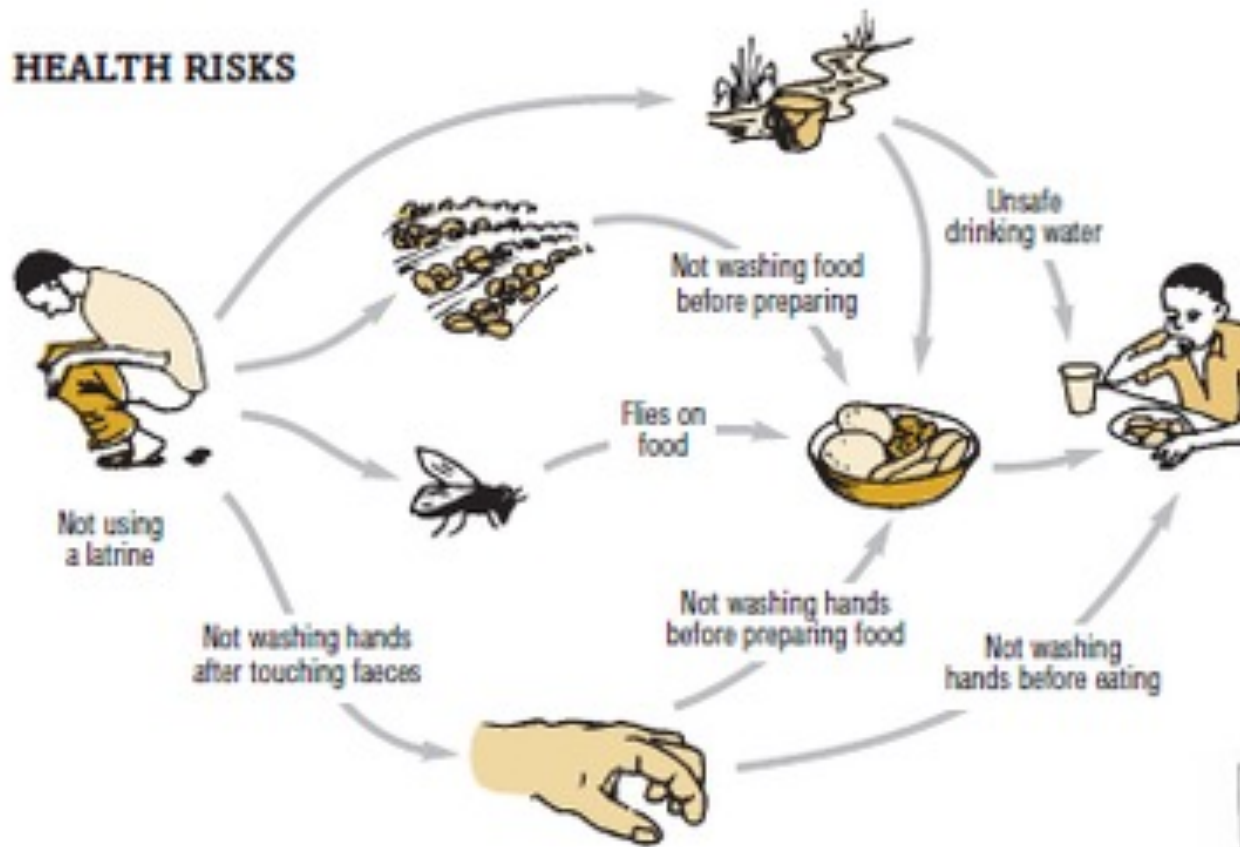
Pourquoi du choléra à Mayotte ?



Pourquoi du choléra à Mayotte ?



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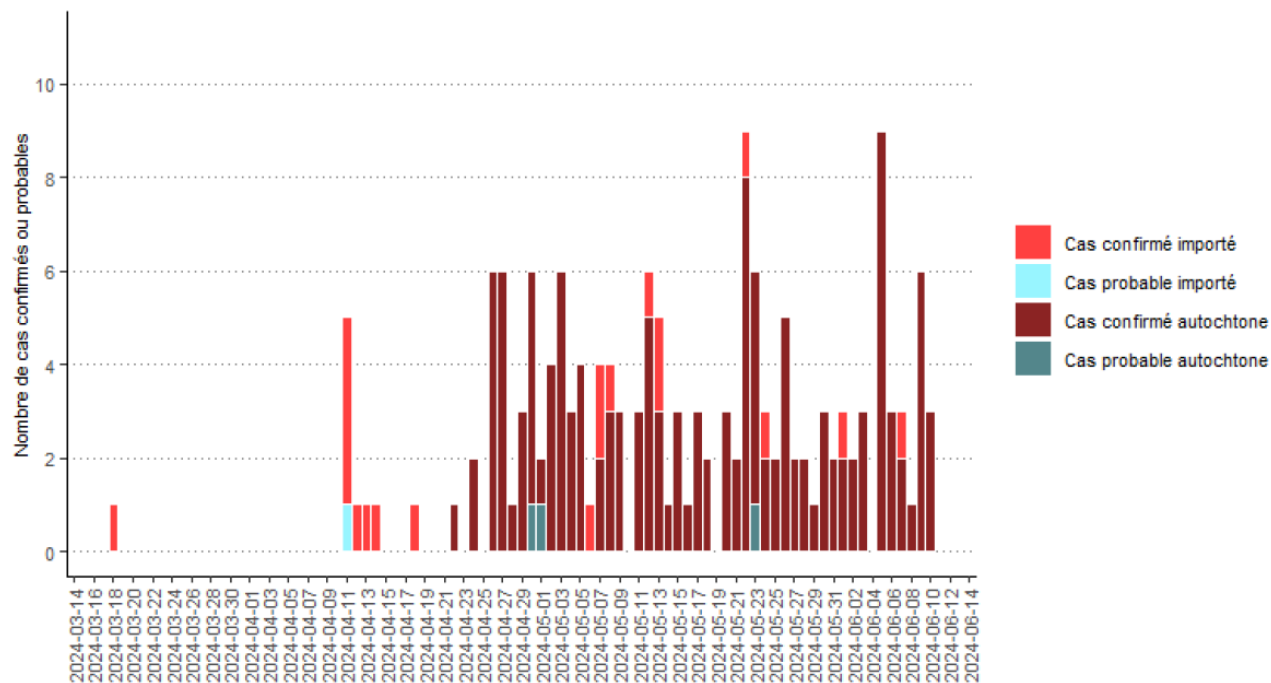


Pourquoi du choléra à Mayotte ?



Pourquoi du choléra à Mayotte ?

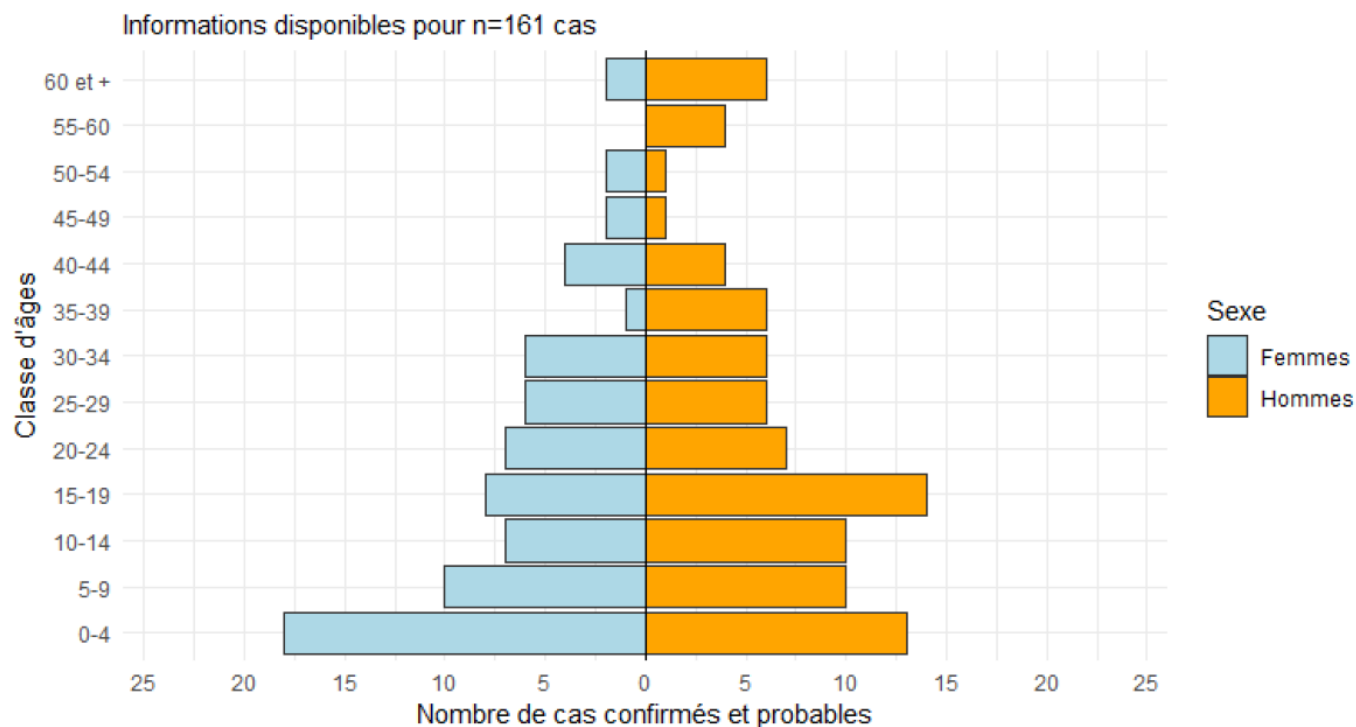
Figure 4 : Répartition des cas de choléra par jour de détection en fonction de leur classification et de leur statut.



Source : LBM du CHM au 11/06/24 . Exploitation Santé publique France.

Pourquoi du choléra à Mayotte ?

Figure 1 : Pyramide des âges des cas de choléra



Source : CHM, MDO. Exploitation Santé publique France

Stratégie de lutte

Stratégie de lutte



Stratégie de lutte



Stratégie de lutte



Stratégie de lutte



Stratégie de lutte



Crédit : ARS Mayotte

Stratégie de lutte



Stratégie de lutte

Se prémunir contre le CHOLÉRA

Le choléra est une maladie qui peut provoquer :

- Des diarrhées
- Des vomissements

Sans prise en charge rapide, il peut y avoir des pertes de sang graves et même des décès très rapides.

OURAHAFOU, OUSORI BAOUSSA NA CHOLÉRA !*

COMMENT ÉVITER LA TRANSMISSION DU CHOLÉRA ?
(Il est très important de respecter la méthode !)

- Lavez-vous régulièrement les mains
- Buvez uniquement de l'eau potable

CONDUITE À TENIR

Vous souffrez de diarrhée et/ou de vomissements, votre situation semble se détériorer ou s'aggraver continuellement depuis moins de 24 heures

Vous souffrez de diarrhée aiguë et/ou d'une déshydratation sévère ou vous souffrez de diarrhée après avoir été en contact avec une personne atteinte de choléra.

1 - N'allez pas...

Ourahafou, ousori baoussa na choléra !*

*L'hygiène, la clé contre le choléra !

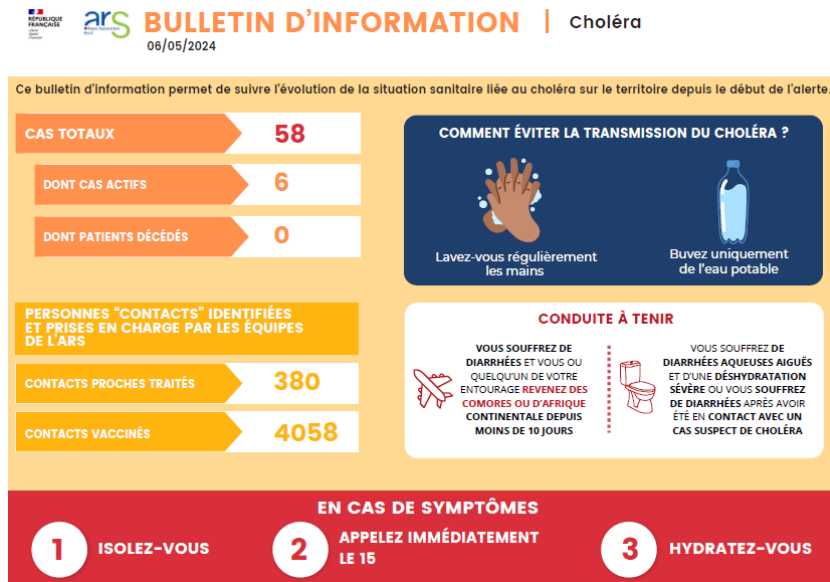
ars
Agence Régionale de Santé
Bordeaux

Choléra
recommandations
et conduite à tenir

Stratégie de lutte

- ❖ Réunion CRAPS bi-hebdomadaire, réunissant l'ensemble des services de l'ARS mobilisés dans la gestion de crise
- ❖ Co-pilotage des réunions de crise au CHM
- ❖ Conférences téléphoniques avec les professionnels de santé libéraux
- ❖ Lien étroit avec la préfecture et le SIDPC
- ❖ Des communications régulières : conférences de presse Préfet – DGARS, plateaux TV/ radio, réponse PQR, publication d'un bulletin d'information, etc.

➔ Une mobilisation 7j/7 des équipes de l'ARS, avec l'appui des renforts de la Réserve sanitaire, pour soutenir un vrai défi opérationnel



Les vaccins disponibles

Les vaccins disponibles

- ❖ **Shanchol**
 - Fabrication interrompue
- ❖ **Euvichol-plus**
 - Vaccin pré-qualifié par l'OMS depuis 2016
- ❖ **Euvichol-S**
 - Vaccin « simplifié » récemment pré-qualifié par l'OMS
- ❖ **Dukoral**
 - Vaccin du voyageur
- ❖ **Vaxchora**
 - Vaccin du voyageur (USA)

Les vaccins disponibles

Table 1. Comparison between WHO-prequalified cholera vaccines and Vaxchora™.

Vaccine	Dukoral®	Shanchol™	Euvichol®	Vaxchora™
Manufacturer	Valneva, France	Shantha Biotechnics, (Hyderabad, India) Sanofi Company	Eubiologics, Seoul, Republic of Korea	PaxVax Inc., US
Developer	SBL Vaccin (Solna, Sweden)	IVI, Shantha	IVI, Eubiologics	PaxVax Inc. (US) Univ. of Maryland and Kentucky
Type	Monovalent, killed whole-cell vaccine O1 serogroup and recombinant cholera toxin B subunit	Bivalent, killed whole-cell (O1 and O139 serogroups)	Bivalent, killed whole-cell (O1 and O139 serogroups)	Monovalent, live, attenuated serogroup O1 classical Inaba strain 569B
Age range for vaccination	≥ 2 years	1 year and older	1 year and older	18–64 yrs
Regimen	2 doses given 7 to 14 days apart (3 doses for children 2 to 5 yrs old)	Two doses 14 days apart	Two doses 14 days apart	Single dose
Booster	Every 2 years for individual ≥6 yrs (every 6 mo for children 2 to 5 yrs)	No recommendation from manufacturer	No recommendation from manufacturer	No recommendation from manufacturer
Route	Oral	Oral	Oral	Oral
Buffer	Sodium bicarbonate buffer	No buffer required	No buffer required	Blend of sodium bicarbonate, sodium carbonate, ascorbic acid, and dried lactose
Duration of protection	2 years (6 months in children 2 to 5 yrs)	At least 3 years Up to 5 yrs	Not available	Not available
Storage	+2°C to +8°C	+2°C to +8°C	+2°C to +8°C	–25°C to –15°C
Shelf Life	36 months	24 months	24 months	24 months
Licensure	60 countries	28 countries	Zambia, Nepal and Pakistan	Approved US FDA, June 2016
WHO prequalification	25 Oct 2001	29 Sep 2011	23 Dec 2015	No

Les vaccins disponibles



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Cochrane Database of Systematic Reviews

[Intervention Review]

Oral vaccines for preventing cholera

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Editorial group: Cochrane Infectious Diseases Group.

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Citation: Sinclair D, Abba K, Zaman K, Qadri F, Graves PM. Oral vaccines for preventing cholera. *Cochrane Database of Systematic Reviews* 2011, Issue 3. Art. No.: CD008603. DOI: [10.1002/14651858.CD008603.pub2](https://doi.org/10.1002/14651858.CD008603.pub2).

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Editorial note: This review is superseded by the published Cochrane Review, Saif-Ur-Rahman 2024 [<https://doi.org/10.1002/14651858.CD014573>], which considers only the oral killed vaccines because the live oral vaccines do not have World Health Organization (WHO) prequalification. Saif-Ur-Rahman 2024 also considered only currently available WHO pre-qualified oral killed cholera vaccines (Dukoral, Shanchol, and Euvichol/Euvichol-Plus).

Summary of findings 1. Summary of findings table: Oral killed whole cell vaccines for preventing cholera

Oral killed whole cell vaccines for preventing cholera

Patient or population: Adults and children**Settings:** Endemic areas**Intervention:** Killed whole cell vaccines administered orally**Comparison:** Placebo

Outcomes	Illustrative comparative risks* (95% CI)		Vaccine efficacy (95% CI)	No of Participants (studies)	Quality of the evidence (GRADE)	Comments
	Assumed risk	Corresponding risk				
	Not being vaccinated	Being vaccinated				
How many people get cholera during the first 2 years after vaccination?	Children aged less than 5 years		VE 38% (20% to 53%)	29005 (4 studies ⁵)	high ^{1,2,3,4}	Oral cholera vaccine prevents just over one third of cholera illnesses.
	90 per 10,000	56 per 10,000 (42 to 72)				
	Older children and adults		VE 66% (57% to 73%)	214066 (4 studies ⁵)	high ^{1,2,3,4}	Oral cholera vaccine prevents two thirds of cholera illnesses
	30 per 100,000	10 per 100,000 (8 to 13)				
How long does the protection last?	3rd year after vaccination; all ages		VE 30% (2% to 50%)	58184 (1 study ⁷)	moderate ⁶	Oral cholera vaccine is probably less effective in the third year
	30 per 10,000	21 per 10,000 (15 to 29)				
	4th year after vaccination; all ages		VE -5% (-84% to 40%)	56613 (1 study ⁷)	moderate ⁶	Oral cholera vaccine is probably ineffective after 4 years
	30 per 100,000	32 per 10,000 (18 to 55)				
Are there any side effects?	All ages			44,924	moderate ⁸	Oral cholera vaccines probably don't have more side effects than a placebo

Les vaccins disponibles

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Global Health Investment Fund Leads \$7.5 Million Partnership to Boost Access to Low-Cost Oral Cholera Vaccine

Korean biopharmaceutical company commits to manufacture a new and improved presentation of the vaccine at a target price of \$1.00 per dose for public sector buyers

Aug 26, 2014

The Global Health Investment Fund (“GHIF”), an innovative financing vehicle structured by JPMorgan Chase & Co. and the Bill & Melinda Gates Foundation, has launched a new partnership to support the final development and distribution of a new oral cholera vaccine for those who need it most. The vaccine, called Euvichol, is poised to become the second World Health Organization prequalified oral cholera vaccine suitable for use in the low- and middle-income countries where cholera still exacts an unacceptable toll on public health and economic productivity.

EuBiologics Co., Ltd. (“EuB”), a Korean biopharmaceutical company focused on delivering vaccine products and contract manufacturing services to improve global public health, has committed to manufacture a new and improved presentation of the vaccine at a target price of \$1.00 per dose for public sector buyers. This is 45% lower than the minimum price currently offered to public sector purchasers, and EuB’s annual manufacturing capacity will be as much as five-times greater than the current global supply.

Les vaccins disponibles



vaccin choléra



Le Parisien

<https://www.leparisien.fr> › Societe › Sante

Choléra : l'OMS approuve une version simplifiée d'un vaccin ...



À propos des extraits optimisés



Commentaires



World Health Organization (WHO)

<https://www.who.int> › ... › item

Des millions de personnes sont menacées par le choléra ...

20 mars 2024 — Des millions de personnes sont menacées par le **choléra** en raison du manque d'eau potable, de savon et de toilettes, et de la **pénurie de vaccins**.



Les vaccins disponibles

The NEW ENGLAND JOURNAL *of* MEDICINE

ORIGINAL ARTICLE

Efficacy of a Single-Dose, Inactivated Oral Cholera Vaccine in Bangladesh

Firdausi Qadri, Ph.D., Thomas F. Wierzbza, Ph.D., Mohammad Ali, Ph.D., Fahima Chowdhury, M.P.H., Ashraful I. Khan, Ph.D., Amit Saha, M.Med., Iqbal A. Khan, M.Sc., Muhammad Asaduzzaman, M.Phil., Afroza Akter, M.B., B.S., Arifuzzaman Khan, M.B., B.S., Yasmin A. Begum, Ph.D., Taufiqur R. Bhuiyan, Ph.D., Farhana Khanam, M.Sc., Mohiul I. Chowdhury, M.P.H., Taufiqul Islam, M.B., B.S., Atique I. Chowdhury, M.Sc., Anisur Rahman, M.Sc., Shah A. Siddique, M.P.H., Young A. You, M.Sc., Deok R. Kim, M.Sc., Ashraf U. Siddik, M.S.S., Nirod C. Saha, M.Sc., Alamgir Kabir, M.Sc., Alejandro Cravioto, Ph.D., Sachin N. Desai, M.D., Ajit P. Singh, M.D., and John D. Clemens, M.D.

Les vaccins disponibles

RESULTS

A total of 101 episodes of cholera, 37 associated with severe dehydration, were detected among the 204,700 persons who received one dose of vaccine or placebo. The vaccine protective efficacy was 40% (95% confidence interval [CI], 11 to 60%; 0.37 cases per 1000 vaccine recipients vs. 0.62 cases per 1000 placebo recipients) against all cholera episodes, 63% (95% CI, 24 to 82%; 0.10 vs. 0.26 cases per 1000 recipients) against severely dehydrating cholera episodes, and 63% (95% CI, -39 to 90%), 56% (95% CI, 16 to 77%), and 16% (95% CI, -49% to 53%) against all cholera episodes among persons vaccinated at the age of 5 to 14 years, 15 or more years, and 1 to 4 years, respectively, although the differences according to age were not significant ($P=0.25$). Adverse events occurred at similar frequencies in the two groups.

Safety and immunogenicity of the Euvichol-S oral cholera vaccine for prevention of *Vibrio cholerae* O1 infection in Nepal: an observer-blind, active-controlled, randomised, non-inferiority, phase 3 trial



Katerina Rok Song*, Ram Hari Chapagain*, Dipesh Tamrakar, Rajeev Shrestha, Piush Kanodia, Shipra Chaudhary, T Anh Wartel, Jae Seung Yang, Deok Ryun Kim, Jinae Lee, Eun Lyeong Park, Haeun Cho, Jiyoung Lee, Patchara Thaisrivichai, Sridhar Vemula, Bo Mi Kim, Birendra Gupta, Tarun Saluja, Ruchir Kumar Pansuriya, Ravi Ganapathy, Yeong Ok Baik, Young Jin Lee, Suhi Jeon, Youngran Park, Howard L Her, Youngshin Park, Julia A Lynch



Summary

Background In October, 2017, WHO launched a strategy to eliminate cholera by 2030. A primary challenge in meeting this goal is the limited global supply capacity of oral cholera vaccine and the worsening of cholera outbreaks since 2021. To help address the current shortage of oral cholera vaccine, a WHO prequalified oral cholera vaccine, Euvichol-Plus was reformulated by reducing the number of components and inactivation methods. We aimed to evaluate the immunogenicity and safety of Euvichol-S (EuBiologics, Seoul, South Korea) compared with an active control vaccine, Shanchol (Sanofi Healthcare India. Telanõana. India) in participants of various ages in Nepal.

Lancet Glob Health 2024;
12: e826–37

See [Comment](#) page e725

For the Nepali translation of the abstract see [Online](#) for appendix 1

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Findings Between Oct 6, 2021, and Jan 19, 2022, 2529 healthy participants (1261 [49.9%] males; 1268 [50.1%] females), were randomly assigned to group A (n=330; Euvichol-S lot number ES-2002), group B (n=331; Euvichol-S ES-2003), group C (n=934; Euvichol-S ES-2004), or group D (n=934; Shanchol). Non-inferiority of Euvichol-S versus Shanchol in seroconversion rate for both serotypes at 2 weeks after the second dose was confirmed in all ages (difference in seroconversion rate for *V cholerae* O1 Inaba -0.00 [95% CI -1.86 to 1.86]; for *V cholerae* O1 Ogawa -1.62 [-4.80 to 1.56]). Treatment-emergent adverse events were reported in 244 (9.7%) of 2529 participants in the safety analysis set, with a total of 403 events; 247 events were reported among 151 (9.5%) of 1595 Euvichol-S recipients and 156 events among 93 (10.0%) of 934 Shanchol recipients. Pyrexia was the most common adverse event in both groups (57 events among 56 [3.5%] of 1595 Euvichol-S recipients and 37 events among 35 [3.7%] of 934 Shanchol recipients). No serious adverse events were deemed to be vaccine-related.

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HUMAN VACCINES & IMMUNOTHERAPEUTICS
2020, VOL. 16, NO. 1, 42–50
<https://doi.org/10.1080/21645515.2019.1644882>



REVIEW



An overview of Vaxchora™, a live attenuated oral cholera vaccine

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ABSTRACT

Cholera remains a public health threat among the least privileged populations and regions affected by conflicts and natural disasters. Together with Water, Sanitation and Hygiene practices, use of oral cholera vaccines (OCVs) is a key tool to prevent cholera. Bivalent whole-cell killed OCVs have been extensively used worldwide and found effective in protecting populations against cholera in endemic and outbreak settings. No cholera vaccine had been available for United States (US) travelers at risk for decades until 2016 when CVD 103-HgR (Vaxchora™), an oral live attenuated vaccine, was licensed by the US FDA. A single dose of Vaxchora™ protected US volunteers against experimental challenge 10 days and 3 months after vaccination. However, use of Vaxchora™ poses several challenges in resource poor settings as it requires reconstitution, is age-restricted to 18 to 64 years, has no data in populations endemic for cholera, and faces challenges related to cold chain and cost.

ARTICLE HISTORY

Received 1 April 2019
Revised 22 June 2019
Accepted 8 July 2019

KEYWORDS

Cholera; oral cholera vaccine; live attenuated

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Safety

The most comprehensive dataset documenting the clinical acceptability of Vaxchora™ comes from a multicenter, double-blind, randomized (8:1), placebo-controlled lot-to-lot (3 lots) consistency trial conducted among adults 18–45 years of age in the United States of America (USA) and Australia (NCT02094586). The safety analysis included 2789 CVD 103-HgR recipients and 350 placebo recipients. Adverse reactions were recorded daily for 7 days following vaccination by 2734 of the 2789 vaccinees (98.0%) and by 343 of 350 placebo recipients (98.0%).³⁸ In the first study, the overall rate of diarrhea among vaccinees was significantly higher (3.9%) than among placebo recipients (1.2%); 61.5% of the diarrheal complaints in vaccinees were mild. Fever was recorded in <1% of vaccinees.⁶⁵ Three other studies provided similar evidence of the vaccine clinical safety in adults aged 18–45 years^{45,66} and 45–64 years³⁸ In a pooled analysis of serious adverse events (SAE) in the four clinical trials, 20 of 3235 Vaxchora™ recipients (0.6%) and 3 of 562 placebo recipients (0.5%) reported an SAE up to 6 months of vaccination. None of these SAEs were vaccine-related (reviewed in³⁸).

Les vaccins disponibles

at 10 days post vaccination.⁶⁵ A randomized, double blind, placebo-controlled reactogenicity and immunogenicity study (NCT02100631) was conducted on 398 adults (46–64 years, mean age 53.8; 45.7% males) with no prior history of cholera infection or travel to a cholera-endemic area in the previous 5 years. Seroconversion rate of O1 Inaba vibriocidal antibody at Day 10 post-vaccination was 93.5% [95% CI, 92.5–94.4%] in vaccine recipients and 4.2% [95% CI, 2.3–6.9%] in placebo recipients.⁶⁵ The age range study in adults (18–45 and 46–64 years) showed that while reactogenicity event rates were comparable between the two age groups, there was a continuous decline in SVA but not in memory B-cell responses in the older age group.⁶⁹

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Challenge with virulent *V. cholerae* O1 at 10 days post vaccination (approximately 10^5 cfu of wild-type *V. cholerae* O1 El Tor Inaba strain N16961) elicited moderate to severe cholera diarrhea in 59.1% of the placebo recipients, significantly higher than the rate among vaccine recipients (5.7%) (efficacy 90.3%). Three months after vaccination the rate of moderate to severe diarrhea among vaccinees after *V. cholerae* challenge was 12.1% (efficacy 79.5%).⁴⁵ The efficacy against moderate to severe cholera among the high-risk blood group O volunteers at 10 days and 3 months were 84.8% (95% CI, 50.4%–100%) and 78.4% (95% CI, 44.2%–100%), respectively.⁴⁵

Choix stratégiques et recommandations

Choix stratégiques et recommandations

- ❖ **Cas importés sporadiques**
 - Antibiothérapie pour les sujets contacts
 - Vaccination autour du cas (à adapter selon les contreindications)
 - Sensibilisation à l'hygiène, distribution de kits d'hygiène au domicile du patient
- ❖ **Contamination à partir d'une source commune**
 - Antibiothérapie si contact
 - Vaccination
- ❖ **Transmission active dans un quartier**
 - Vaccination de l'ensemble de la population du quartier
 - Maraudes, recherche active de cas
 - Apport en eau
 - Sensibilisation à l'hygiène, distribution de kits d'hygiène
- ❖ **Quartiers particulièrement vulnérables**
 - Apport en eau et vaccination
 - Sensibilisation à l'hygiène



Fin de
présentation.
Merci pour votre
attention.