ciency due to symptomatic HIV/AIDS or other causes, or who have a thymus disorder. People over 60 years of age should be given the vaccine after a careful risk-benefit assessment [3].

Conclusions

Yellow fever vaccines is now recommended as routine immunization in countries where it is very common. It is safe and affordable and readily distributed in endemic countries.

To also guarantee a rapid and effective response to outbreaks, an emergency stockpile of 6 million doses of yellow fever vaccine, funded by Gavi, is continually replenished. This emergency stockpile is managed by the International Coordinating Group for Vaccine Provision, for which WHO serves as secretariat. It is expected that by the end of 2026, more than 1 billion people will be protected against yellow fever through vaccination.

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THE EPIDEMIOLOGY OF TYPHOIDAL SALMONELLA INFECTIONS IN REGIONS OF ENDEMICITY

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Relevance

Salmonella enterica is one of the leading causes of community-acquired bloodstream infections in many low- and middle-income countries. Salmonella enterica serovars Typhi, Paratyphi A, Paratyphi B, and Paratyphi C may be referred to collectively as typhoidal Salmonella, whereas other serovars are grouped as nontyphoidal Salmonella (NTS). Typhoidal Salmonella strains are human host-restricted organisms that cause typhoid fever and paratyphoid fever, together referred to as enteric fever. NTS strains may infect or colonize a broad range of vertebrate animals, or may be adapted or restricted to particular nonhuman animal species [1].

Purpose of the study

To review the epidemiology of typhoidal salmonella infections, highlighting possible changes over the years in regions of endemicity and newer measures in prevention and management.

Materials and research methods

Reviews, analysis, data processing of domestic and foreign literature on typhoidal salmonella infections and possible changes in its epidemiology over the years in endemic regions.

Results and discussion

Epidemiology of typhoidal Salmonella. Enteric fever is usually prevalent in overcrowded and poor countries. Regions of Africa, Southeast Asia have been said to be high risk areas. Other regions of Asia and Africa, some parts of Latin America, the Caribbean, and Oceania have a medium incidence of 10 to 100 cases per 100,000 person-years. An estimated 17 million cases of typhoid and paratyphoid fever illnesses occurred globally in 2015,3 mostly in South Asia, Southeast Asia, and sub-Saharan Africa, with both the largest burden and incidence occurring in South Asia. Modeled estimates from the 2015 Global Burden of Disease study (GBD 2015) showed typhoid fever incidence rates decreasing as age increased [2]. Left untreated, both typhoid and paratyphoid fever may be fatal with 178,000 deaths estimated worldwide in 2015 [2, 3]. Patients in endemic areas are usually school aged children or adolescents, and it affects both sexes equally.

Data from ongoing disease surveillance and modeling efforts identify nearly 12 million cases of typhoid and more than 128,000 typhoid-related deaths worldwide each year, largely concentrated in South Asia and sub-Saharan Africa. Of these deaths, an estimated 90 percent occur in Asia. However, the burden is thought to be underestimated given diagnostic challenges and difficulties with surveillance.

Data from Ministry of Health surveillance reports in Thailand highlight a shift from S. Typhi as the primary typhoidal Salmonella bacteria isolated to S. Paratyphi. Thailand consists of seven regions, of which four are showing this transition between 2004 and 2014 [4]. Within the Bangkok and Vicinities region, two provinces (Bangkok and Samut Prakan) of the six that comprise the region show S. Typhi incidence decreasing as S. Paratyphi increases [4, 5]. This shift is also observed in three provinces (Ratchaburi, Kanchanaburi, and Phetchaburi) from the western region of Thailand [6]. Although improvements in water, sanitation infrastructure, and public health measures have led to the virtual disappearance of typhoid fever transmission within the developed world, residual cases largely occur in travelers returning from countries where typhoid fever remains endemic [7]. Knowledge of local disease burden, risk factors for acquisition, transmission characteristics, and implemented control measures are essential in developing strategies for prioritized and optimally targeted typhoid and paratyphoid fever control, and elimination.

The strain, H58, emerged in South Asia between 25 and 30 years ago and has slowly grown to become one of the predominant forms of the bacteria Salmonella Typhi, studied author Vanessa Wong, a microbiologist at the University of Cambridge in England.

An outbreak that began in late 2016 in Hyderabad, Pakistan, has been classified as extensively drug-resistant — a new step in typhoid's evolution. As these resistant strains grow more, the new antibiotic treatment courses have become lengthy and more expensive. This difficult treatment affects the patient, the family, and the health system. Increased costs of illness have long-lasting repercussions for economic productivity within families, communities, and countries. In many areas, these new antibiotics may not be available.

According to a study carried out 'incidence of invasive salmonella diseases in Africa', between March 1, 2010, and Jan 31, 2014, 135 Salmonella enteric serotype Typhi (S Typhi) and 94 iNTS isolates were cultured from the blood of 13 431 febrile patients. Salmonella spp accounted for 33% or more of all bacterial pathogens at nine sites. The adjusted incidence rate (AIR) of S Typhi per 100 000 person-years of observation ranged from 0 (95 % CI 0–0) in Sudan to 383 (274–535) at one site in Burkina Faso; the AIR of iNTS ranged from 0 in Sudan, Ethiopia, Madagascar (Isotry site), and South Africa to 237 (178–316) at the second site in Burkina Faso. The AIR of iNTS and typhoid fever in individuals younger than 15 years old was typically higher than in those aged 15 years or older. Multidrug-resistant S Typhi was isolated in Ghana, Kenya, and Tanzania (both sites combined), and multidrug-resistant iNTS was isolated in Burkina Faso (both sites combined), Ghana, Kenya, and Guinea-Bissau. Modes of transmission. Typhoidal Salmonella is usually transmitted through water or food contaminated with human feces. The risk of typhoid fever is very high in underdeveloped and developing countries where there is low to middle income and poor sanitation due to lack of basic social amenities. Enteric fever in high income countries has a low incidence rate and is most likely as a result of travelling abroad. Occasionally, direct fecal-oral transmission may occur. Shellfish taken from sewage-polluted areas are an important source of infection; transmission also occurs through eating raw fruit and vegetables fertilized by human excreta and through ingestion of contaminated milk and milk products. Typhoid only impacts rural communities that lack access to improved water sources and sanitation facilities. In reality, as more people migrate to urban areas, the close living quarters and potential for contaminated food and water increases the ease and speed of typhoid transmission. For example, in an outbreak in Zimbabwe, the capital city of Harare contributed 76 percent of overall reported typhoid cases in the country. Contaminated water sources and inadequate sewage systems exacerbate transmission.

An expected two-thirds of the world's population will live in urban areas by 2050. As cities continue to grow, it will become increasingly vital to strengthen typhoid prevention and control measures in the world's cities.

Atypical manifestations of typhoid fever include isolated severe headaches that may mimic meningitis, acute lobar pneumonia, isolated arthralgias, urinary symptoms, severe jaundice, or fever alone. Some patients, especially in India and Africa, present primarily with neurologic manifestations such as delirium or, in extremely rare cases, parkinsonian symptoms or Guillain-Barré syndrome. Enteric fever may also complicate pregnancy and rarely causes neonatal infection.

Conclusions

Salmonella enterica infections are common causes of bloodstream infection in low-resource areas. Salmonella typhi which is the cause of typhoid fever is endemic in low- and middle-income countries where there is need for basic social amenities (Africa, Southeast Asia, some parts of Latin America etc.). Concerted efforts are needed if scientific, public health, and policy making communities are going to overcome the current burden of typhoid fever most importantly in Asia and Africa. These efforts will need to start with improved diagnostics that will then underpin the high-quality field and molecular epidemiology required to inform novel approaches to disease modeling. Such models may help to fill challenging gaps in our knowledge of disease source and transmission, and have the potential to predict the impact of nonvaccine and vaccine interventions. Surveillance to detect further development of antimicrobial resistance and trials to establish optimal case management are essential. Improving patient outcomes will require clinical studies to inform patient management algorithms. Also, education on good sanitary practices will play a vital role in prevention and transmission of typhoid fever.

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ИНСУЛЬТ ПРИ ВИЧ-ИНФЕКЦИИ. КЛИНИЧЕСКИЙ ПРИМЕР

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Введение

Инсульт — это растущая причина заболеваемости и смертности среди ВИЧ-инфицированных [3]. Все больше доказательств того, что ВИЧ является независимым фактором риска развития инсульта, приводит к появлению населения, живущего с ВИЧ и инсультом во всем мире [5].

Лица с ВИЧ более подвержены риску инсульта по сравнению с неинфицированными популяциями. Анализ данных исследований показал 40 % увеличение риска возникновения ишемического инсульта на фоне ВИЧ-инфекции. Роль ВИЧ-ассоциированной иммуносупрессии в механизме инсульта является неопределенной.

ВИЧ-инфекция и, возможно, ее лечение, увеличивает риск развития ишемического инсульта. Многочисленные этиологии и отсутствие четких определений случаев препятствуют прогрессу в этой области. Некоторые этиологии, многие поддающиеся лечению, имеют отношение к заболеванию, связанному с ВИЧ. Чтобы полностью понять механизмы и используемую терминологию, необходим надежный алгоритм классификации, чтобы помочь приписать различные этиологии. Определения случаев для основных этиологий в отношении