

XDR TYPHOID EPIDEMIC IN PAKISTAN

Pakistan is currently battling the world's first epidemic of extensively drug resistant (XDR) typhoid. The strain of XDR *Salmonella enterica* serovar Typhi is resistant to five classes of antibiotics (chloramphenicol, ampicillin, trimethoprim-sulfamethoxazole, fluoroquinolones, and third-generation cephalosporins). It is currently sensitive only to azithromycin. This strain of *Salmonella* probably picked up the drug resistance plasmid from an *E. coli* strain. Drug resistance in typhoid is rising at an incredible 30% every year in Pakistan. The current strain was first detected in November 2016, and has been laboratory-confirmed in more than 800 people since then. An analysis of the genome sequence of a *Salmonella typhi* sample isolated from a patient in the United Kingdom, who had recently traveled from Pakistan, showed that the isolate belonged to the same cluster of XDR isolates.

With the help of the Bill and Melinda Gates foundation, 250,000 vials of vaccine have reached Pakistan this year. This conjugate typhoid vaccine (Typhbar) was developed in India. However many locals view the vaccine with suspicion considering it to be a foreign ploy targeted at their children, and have refused inoculation.

Bacteria do not respect borders. It is we who need to join forces and work quickly if we are to outsmart these wily villains. (*Scientific American* 14 March 2018)

MIXED MALARIAL INFECTIONS

By far the largest epidemiological study on malaria was recently published by the ICMR's National Institute for Research in Tribal Health, Jabalpur. Samples were collected from most of the malaria-endemic regions covering 11 locations from 9 states. All samples were subjected to microscopy, rapid antigen detection tests and molecular diagnostic tests (PCR and DNA sequencing). Of the 2333 samples, 827 cases were positive by PCR. *P. falciparum* was documented in 42%, *P. vivax* in 45%, and mixed infections in 13%. *P. falciparum* was uncommon in Northern India and mixed infections were most common in Central India. Microscopy failed to detect 63 cases and rapid antigen tests failed to pick up 34 cases picked up by PCR.

The study has thrown up important data. The proportionate contribution of *falciparum* malaria is increasing. In 1986, the ratio of *falciparum* to *vivax* malaria was 0.4:1 and now it is almost 1:1. The rapid antigen detection tests often misdiagnose mixed infections as mono infections. Since the clinical course and management guidelines for mixed infections are not clear, clinicians need to be aware of this entity. *P. malariae*, which was unheard of except a rare case from Odisha, is now being picked up from other parts of India. The detailed information collated in this study will help planners in the goal of malaria eradication by 2030. (*PLoS One*.22 March 2018)

TALCUM POWDERS AND CANCERS

More than a hundred years ago, Dr Frederick Kilmer invented a scented talcum that would go on to be the bestselling baby powder. It was so pleasant that many women starting sprinkling it in their inner wear. In 2006, a physician assistant in the US was diagnosed with ovarian cancer at the age of 49 years. She had sprinkled the talc in her underwear for most of her life. She sued the pharmaceutical giant blaming it for negligence and fraud. Since then the company is facing over 6000 lawsuits – most of them from women with ovarian cancer.

In April 2018, a New Jersey jury has ordered the company to pay \$37 million to Steven Lanzos who claims he developed mesothelioma due to the inhalation of the talc powder that he has regularly used since his birth in 1972.

What are the facts behind these claims? Talcum powder is made of talc. This mineral contains magnesium, silicon and oxygen. It absorbs moisture well, and is widely used in cosmetic products. Natural talc contains asbestos that is associated with various cancers including mesothelioma. Since 1970, modern cosmetic products are asbestos-free. However, even pure talc is chemically similar to asbestos. Perineal use of talcum powder has been positively associated with ovarian cancer risk in a number of case-control studies; although, the magnitude of the associations has been modest, with odds ratios ranging from 1.2 to 1.9, and not all results reached statistical significance. A prospective cohort study in US nurses failed to show any substantial association between perineal talc use and ovarian cancer.

The American Cancer Society recommends that until more information is available, people concerned about using talcum powder may want to avoid or limit their use of consumer products that contain it. (*www.express.co.uk* 12 April 2018)

CBSE MAKES SPORTS PERIOD MANDATORY

The Central Board of Secondary Education (CBSE) in India has made it mandatory to include a daily sports period for all classes, in schools affiliated with it. They have laid especial emphasis on classes IX to XII where an alarming trend of obesity has been noticed. The board has prepared a 150-page manual with details of possible activities that children can perform. Every child has to go to the playground during the Health and Activity period. However he/she can choose an activity from the suggestions in the manual. The student will also be graded on the same. They will also have to do any kind of outdoor project every year. Grading will be done by the teacher and will be submitted onto CBSE website. (*www.financialexpress.com* 23 April 2018)

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