Journal of the British Global and Travel Health Association, vol 26 2016 1-2
doi: http://dx.doi.org/10.21864/jbgtha.2016.01b

Journal Watch

Editor: Dr Mike Townend

Systematic review of loperamide: No proof of antibiotics being superior to loperamide in treatment of mild/moderate travellers' diarrhoea.
Lääveri T, Sterne J, Rombo L, Kantele A. Travel Med Infect Dis. 2016 Jul-Aug;14(4):299-312. doi: 10.1016/j.tmaid.2016.06.006. Epub 2016 Jun 27.
This review explores the literature on loperamide in treating travellers' diarrhoea (TD). The authors' conclusions are that adhering to manufacturer's dosage recommendations, loperamide offers a safe and effective alternative for relieving mild and moderate symptoms. Moreover, loperamide taken singly does no predispose to contracting MDR bacteria. Most importantly, the authors found no proof that would show antibiotics to be significantly more effective than loperamide in treating mild to moderate TD.

Use of antimicrobial agents for treatment and prevention of travellers' diarrhoea in the face of enhanced risk of transient fecal carriage of multi-drug resistant enterobacteriaceae: setting the stage for consensus recommendations.
DuPont HL, Steffen R. J Travel Med. 2016 Aug 8;23(6). pii: taw054. doi: 10.1093/jtm/taw054. Print 2016 Jun.
This review attempts to put the issues of therapy and acquisition of multi-drug resistant (MDR) micro-organismsin perspective to help in the establishment of therapeutic recommendations for travellers' diarrhoea. The existing literature showing the risk and consequences of acquisition of MDR microbiota in antibiotic-treated travellers was reviewed. Issues important to the development of firm evidence-based recommendations for antibiotics use for treatment and prevention of travellers' diarrhoea were researched. Six areas of needed to allow the development of evidence-based recommendations for antibiotic-treatment and prevention of travellers' diarrhoea were identified.

The authors note an interdisciplinary ISTM Consensus group will consider data available and develop recommendations for therapy and chemoprevention of travellers' diarrhoea, considering groups who would benefit the most from antimicrobials, while recognizing e hazards associated with broad use of these drugs. With interim recommendations and ultimately evidence-based recommendations, guidelines can be developed for management of travellers' diarrhoea considering populations and destinations.

Travel to Asia and traveller's diarrhoea with antibiotic treatment are independent risk factors for acquiring ciprofloxacin-resistant and extended spectrumβ-lactamase-producing Enterobacteriaceae - a prospective cohort study.
Reuland EA, Sonder GJ, Stolte I c Clin Microbiol Infect. 2016 Aug;22(8):731.e1-7. doi: 10.1016/j.cmi.2016.05.003. Epub 2016 May 17..
This study investigated rate of and risk factors for travel-related acquisition of extended spectrum β-lactamase-producing Enterobacteriaceae (ESBL-E), ciprofloxacin-resistant Enterobacteriaceae (CIPR-E) and carbapenem-resistant Enterobacteriaceae. Data was collected from 445 participants. before and after travel . Twenty-seven out of 445 travellers (6.1%) already had ESBL-producing strains and 45 of 445 (10.1%) travellers had strains resistant to ciprofloxacin before travel. Ninety-eight out of 418 (23.4%) travellers acquired ESBL-E and 130 of 400 (32.5%) travellers acquired a ciprofloxacin-resistant strain. Of the 98 ESBL-E, predominantly Escherichia coli and predominantly blaCTX-M-15, 56% (55/98) were resistant to gentamicin, ciprofloxacin and co-trimoxazole. Multivariate analysis showed that Asia was a high-risk area for ESBL-E as well as CIPR-E acquisition.

The authors conclude that travellers with diarrhoea combined with antimicrobial use were significantly at higher risk for acquisition of resistant strains. Travelling to Asia and diarrhoea combined with antimicrobial use are important risk factors for acquiring ESBL-E and CIPR-E.

Comment
These three papers highlight the importance of travel in the emergence and spread of drug-resistant micro-organisms and in particular the role of travellers' diarrhoea (TD) and its treatment with antibiotics. The paper by Lääveri, Sterne, Rombo and Kantele shows no additional benefit of antibiotics over loperamide in treating mild to moderate TD. The paper by DuPont and Steffen underlines the importance of developing a consensus on recommendation s for the prevention and treatment of TD, and in particular on the role of antibiotics. The paper by Reuland et al also highlights the importance of antibiotics in the development of multi-drug resistant (MDR) micro-organisms and in addition points out the risk for travellers from areas with low levels of drug resistance going to tropical and sub-tropical areas with high levels of MDR micro-organisms.

Respiratory infections and gastrointestinal illness on a cruise ship : three-year prospective study.
Pavli A Maltezou H Papakadis .
2016 Trav med and infectious disease 14. 389 – 397
There are reports every year of E. coli outbreaks and influenza which can affect several ships and many hundred passengers. This study aimed to estimate the incidence of infections and describe the spectrum of respiratory infection and GI illness among passengers and crew of one cruise ship. The research, carried out during 2011 – 2013, included passengers and crew who presented with symptoms suggestive of acute respiratory infection,(ARI), influenza -like illness(ILI) and gastrointestinal (GI) illness. Advice about preventive measures of respiratory and gastrointestinal infections and influenza vaccination had been given to passengers and crew. The most common destination was Northern Europe (90.7%). The mean duration of cruise was 10.6 days; 440 passengers and 421 crew members sought medical attention, mean age 72.6-79.5 and 33-37 years respectively. ILI, ARI and GI were diagnosed in 32.7%, 15.9%, 17% of ill passengers and 10.9%, 80%, 0.2% of ill crew. The association of ARI, ILI and GI incidence in passengers was statistically significant

Comment
Cruise ship sailing is very popular particularly among older travellers. The ships provide close communities with a potential environment for transmission of infections particularly respiratory and gastrointestinal in nature. This study highlights the much higher incidence of influenza-like illness and gastrointestinal illness in passengers than in crew members, the majority of whom suffered only acute respiratory infections. The reduced effectiveness of immune functions in older people appars to be the most likely explanation for tis difference.

Evidence for and Against Genetic Predispositions to Acute and Chronic Altitude Illnesses.
MacInnis MJ, Koehle MS.
High Alt Med Biol 00:000–000, 2016.
This paper begins by pointing out the marked variation in responses to hypoxia and in susceptibility to acute and chronic altitude illnesses, and the subsequent hypotheses that genetic differences are the cause of these variable responses. The authors conclude that although evidence to support a genetic basis for susceptibilities to acute mountain sickness (AMS) and high-altitude cerebral oedema (HACE) is limited, recent genomic studies have identified genes that influence susceptibility to high-altitude pulmonary oedema, chronic mountain sickness, and high-altitude pulmonary hypertension. They further conclude that the collection of more individual, familial, and biogeographical susceptibility data should improve understanding of the extent to which genetic variation contributes to altitude illness susceptibility, and genomic and molecular investigations have the potential to elucidate the mechanisms that underpin altitude illness susceptibility.

Comment
This paper supports the concept of a genetic predisposition to altitude illness, but so far only in the case of its cardiopulmonary manifestations, high altitude pulmonary oedema and pulmonary hypertension and chronic mountain sickness. It remains to be seen if this will lead to improvement in the understanding of the mechanism underlying these condition, their management, and the ability to predict who is likely to suffer from them. Although evidence supporting a genetic predisposition to acute mountain sickness and high altitude cerebral oedema is currently limited, this does not rule out the possibility that future research may provide such evidence.