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Outer temperature and *Salmonella* gastroenterocolitis in Slovenia from 2003 to 2007

Mag . Eva Grilc, National Institute of Public Health

Introduction

Surveillance of (*Salmonella*) gastroenterocolitis (SG) in Slovenia is based on Law on Communicable Diseases (Official Gazette 33 / 06) and Act on Registration (Official Gazette 16/ 99). The incidence of SG is based on notification. From 1999 to 2009 the incidence of all infectious diarrhea (ID) , special viral ID increased in Slovenia. The incidence of SG peaked in 2003 and later decreased. Many factors influence the incidence of SG, among them also outer temperature.

Table 1: Incidence of *Salmonella* gastroenterocolitis per 100 000 inhabitants in Slovenia from 2003 to 2010.

Year	2003	2004	2005	2006	2007	2008	2009	2010
Incidence of <i>Salmonella</i> gastroenterocolitis / 100 000 inhabitants	200	165	75	75	67	54	31	17

Materials and methods

We compared the monthly regional incidence of SG with average monthly outer temperature in 2007 and average monthly regional incidence of SG from 2003 to 2007 with average monthly outer temperature from 2003 to 2007 in Slovenia. The degree of correlation between two data sets were assessed by Pearson coefficient.

Results

Table 2: Pearson coefficient for outer temperature and acute *Salmonella* gastroenterocolitis in 2007 and from 2003 to 2007.

Region	Ljubljana	Celje	Maribor	Murska Sobota	Nova Gorica	Koper	Novo Mesto
2007	0,83 ; p=0,04	0,65; p=0,15	0,65 ; p=0,15	0,73; p=0,09	0,513; p=0,29	0,85; p=0,03	0,226; p= 0,66
2003 -2007	0,89; p=0,01	0,93; p= 0,00	0,86; p=0,06	0,967; p=0,002	0,89; p=0,01	0,80; p=0,053	0,93; p=0,00

Also the comparison of number outbreaks of *Salmonella* gastroenterocolitis in Slovenia with average monthly outer temperatures in 2007 was positive (Pearson coefficient was 0,865; p=0,02).

Discussion, conclusion

Pathogens such as *Salmonella* multiply at room temperature. It has long been observed, that infections with *Salmonella* peak in the summer. It is therefore plausible, that higher outer temperatures/warmer weather may facilitate the transmission of infectious intestinal disease (1). Nevertheless, the incidence of *Salmonella* gastroenterocolitis is affected by many other factors, which were not included in our univariant analysis.

References

1. Kovats S. Climate change, temperature and foodborne disease. Eurosurveillance; 49: 2003.
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