

Hazards of Tick Borne Diseases in Korea

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On top of the recent heat wave, the summer months in Korea also bring the hazard of ticks. Ticks are small arachnids that feed on the blood of humans and animals. Ticks often carry with them several kinds of diseases such as Scrub-Typhus, Severe Fever with Thrombocytopenia Syndrome (SFTS), Lyme disease and Viral Encephalitis. These diseases are prevalent from April thru December. During this time, people must be vigilant when participating in outdoor activities. The main risk activities are when in forests/grass, camping, fishing, and hiking.



그림 12 [작은소피참진드기(좌로부터 암컷, 수컷, 약충, 유충)
(한 눈금 단위 : 1mm)]

<작은소피참진드기 (*Haemaphysalis longicornis*)'s female, male, nymph and larva from left>

Tick-borne disease prevention guide when outside:

- Whenever possible use permethrin treated clothing and/or repellent containing DEET (DEET is 85% effective at repelling ticks. 97% effective repelling mosquitos).
- When climbing a mountain or strolling in a park, avoid short shirts, short pants, sandals and flip-flops. Wear a hat, long shirts and socks.
- Apply the repellent to your sleeves and trouser cuffs.
- Walk in the center of paths and avoid thick woods and high grass.
- Do not sit or lie down on the grassy areas. If you must, then use a mat.
- Do not leave your clothes on the grass and after outside activities, shower very well. Wash your clothes, socks, gloves and towels.
- When in the field, Soldiers must be well informed of the tick hazard and use repellent.

Severe Fever with Thrombocytopenia Syndrome (SFTS)

SFTS is the most serious tick-borne disease because there is no cure. This is relatively prevalent in Korea, Japan and China. The SFTS virus was discovered in Korea in 2012 with 1 case and 1 fatality. In 2013, there were 34 cases with a 45% fatality rate and in 2015, 80 cases with a 28% fatality rate. SFTS has symptoms of high fever (38~40 degrees) lasting 3~10 days, digestive symptoms effects including nausea, vomiting, diarrhea, and a poor appetite. SFTS can be treated with medicine, but there is no antiviral agent. For that reason, the best way to avoid this disease is minimum or no amount of contact with ticks. Ticks with SFTS are found in all regions of Korea. The Korea Centers for Disease Control and Prevention reported SFTS virus is present in 0.5 % of ticks tested.

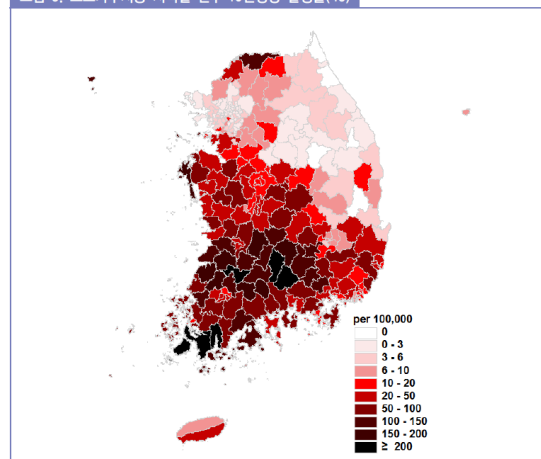
Scrub Typhus

Scrub typhus is a disease with symptoms of fever, chills, headache, muscular pain, cough, vomiting, stomachache, a sore throat, appeared rash and eschar on the skin. According to the result of an epidemiological survey from the Korea Centers for Disease Control and Prevention, most bites are in areas on the body of overlapping and damp skin such as the stomach, waist, armpit and chest.

그림 9. 털진드기 유충에 물린 후 형성된 가피



그림 5. 프로파우시증 지역별 인구 10만명당 발생률('15)



<Eschar after bites from Trombicula larvae> < Probability of patients per 100,000 people per region>

Tick bites have transmitted the Scrub Typhus disease to ~10,000 patients across Korea in 2015 alone. These numbers have been increasing each year since 1994. When not properly treated, the fatality rate of Scrub Typhus is up to 30%. However, the fatality rate of Scrub Typhus patients when treated is about 0.2% in Korea.

Lyme Disease

In the USA, Lyme disease is the most common tick-borne disease, but rare in Korea. This is a germ disease caused when an infected tick bites the human skin. Lyme disease has symptoms of erythema migrans (red circular rash on the skin) in 70~ 80 % of patients. Symptoms of Lyme disease are tiredness, fever, headache, stiff neck, muscle pain, joint pain, and facial paralysis.



Tick-borne Viral Encephalitis

Tick-borne viral encephalitis is prevalent in Europe, Russia and Asia. Presently Tick-borne viral encephalitis has not been reported in any patients, but the possibility exists because the virus has been verified in Korean tick species. Tick-borne viral encephalitis causes various neurological symptoms, such as convulsions and paralysis. Paralysis may dissipate over 6 months or remain permanently. There is no particular treatment or medicine for the disease, however doctors are able to treat the symptoms.

<References>

Tick-borne disease management from Korea Centers for Disease Control and Prevention in 2017. (www.cdc.go.kr)

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Photos: https://commons.wikimedia.org/wiki/File:OSC_Microbio_12_02_LymeRash.jpg