



# Stop AMR

## Global Media Monitor

18 -24 April 2020

[www.stopamr.eu](http://www.stopamr.eu)

### Sepsis study highlights risks of overly broad antibiotic treatment

A new study published last week investigated data on 17430 adults treated for sepsis. As broad-spectrum of antibiotics are commonly used as a sepsis treatment, researchers wanted to determine when and if it was necessary as well as the consequences to administrate such a heavy treatment when not requested.

Sepsis, which occurs when the body is overreacting to an infection and causes tissue damage and organ failure, is one of the main causes of death in hospitalized populations.

The patient outcome analysis showed that unnecessarily broad empiric antibiotics and inadequate empiric antibiotic therapy were both associated with an higher mortality rate.

Increased mortality in overtreated patients was linked to an increased risk of *Clostridioides difficile* infection and a more probable occurrence of acute kidney failure and gut microbiome disorder. The researchers conclude that if it seems logical that guidelines highlight broad-spectrum antibiotic therapy to treat sepsis, the results of the research suggest that clinicians must compare the risks of unnecessarily broad antibiotic treatment against the risk of an inadequate one.

Source: [CIDRAP](#), 21 April 2020

### Study reveals raw-type dog foods as a major source of multidrug-resistant bacteria that could potentially colonize humans

The authors of a new published study analysed enterococci lines obtained from processed and non-processed dog foods from multiple international brands. The bacteria sample were collected, and multiple antibiotics were used to test their sensibility.

Across all tested non processed raw-food, bacteria carrying multi drug resistance genes were found, some even resistant to last-line antimicrobial.

This discovery could emphasize the need to minimally process such kind of food, at least to cook them, to prevent possible gene transmission and increase the threat that multi-resistant bacteria already represent.

Source: [EurekAlert!](#), 19 April 2020

### Aquaculture at the crossroads of global warming and antimicrobial resistance

Aquaculture is vital to produce enough food in many countries and secures around 50% of consumed fish worldwide. To prevent disease and increase rentability, fish farmers commonly use large quantities of antimicrobial to prevent and cure diseases. French researchers examined data from around 400 articles to study the effect of temperature on the mortality rate of aquatic animals while infected with pathogenic bacteria usually found in fish farms.

Next, they investigated the abundance of resistant bacteria and calculated the “Multi-Antibiotic Resistance” index of countries where the used studies were conducted.

It appears that climate change promotes development of pathogenic bacteria and so, directly impacts possible diseases development in aquaculture. As the number of diseases outbreaks will rise, it is normal that antibiotic use will follow through.

The main issue is that acquired resistances in aquaculture can next translate itself in other bacteria and spread resistance genes to bacteria commonly infecting humans. Producers in the Southern hemisphere absolutely need to reduce their antibiotic consumption and find alternatives to prevent a steep rise in mortality rates as a result of antimicrobial resistance.

Source: [EurekAlert!](#), 20 April 2020

---

### Researchers uncover mechanisms of protective antibody response during Marburg infection

A study focused on specific antibodies from a survivor of a Marburg infection. They identified a novel mechanism which contribute to protect the organism against the disease. The Marburg virus is from Ebola's family, causing haemorrhagic fever, and has a high lethality score (around 90% in the last outbreak). They discovered that specific antibodies were capable to bind to the envelope of the virus but were incapable to kill it. But, while attaching to the envelope, they rearrange the organization of it, leading to a stronger response to other families of antibodies capable to kill the virus.

To confirm the hypothesis, mice were infected by the virus. 24 hours later, some mice were administrated a shot of antibodies. All treated mice survived while the other died.

Source: [EurekAlert!](#), 21 April 2020

---

### Promising MERS coronavirus vaccine trial in humans

MERS virus, first described in 2012, is transmitted from Camelidae to humans. Once the virus is in the human population, it can also spread between humans and has a mortality rate of up to 35%. At this date, no vaccine or efficient drug is on the market.

This promising vaccine is developed since 2014 and is based to the injection of a weakened version of the virus into the organism. The chosen virus is the one used to eradicate smallpox. The weakened virus was transformed to contain proteins specific to the MERS. Treated populations will see their immunity boosted as their organism will be ready to fight the real virus as it destroyed the previous one.

After a first test-period, it appears that results regarding tolerability and safety of the vaccine but also the immune responses after injection are really promising.

Researchers will now try to quickly develop a new weakened virus containing COVID-19 signature.

Source: [EurekAlert!](#), 22 April 2020

---

---

### Research reveals a new malaria vaccine candidate

Malaria kills annually 500 thousand peoples around the globe but most of them are in already vulnerable areas. It appears that researchers discovered a new strategy to fight this disease.

An antibody focusing a particular malaria protein, called PfGARP, was discovered in blood samples collected from children naturally immune against the disease.

Laboratory tests shows that antibodies to PfGARP, induces a self-destruct mechanism.

The team tested the efficiency of those antibodies in two nonhuman primates and results showed that vaccinated primates were resistant to a malaria parasite infection.

An interesting aspect of this research is that the vaccination strategy is different than other ways malaria was previously challenged. In that precise case, malaria is the own actor of its demise and there is hope that the vaccine, combined if needed with other malarial antigens, will prevent severe malaria cases.

Researchers hope to start human trials in the coming years after more animal trials.

Source: [EurekAlert!](#), 22 April 2020

---