Vaccines for horses: very rare and mostly mild adverse effects

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A four-year retrospective study (2019-2022) of adverse effects reported in horses after vaccination was carried out by the French Agency for Veterinary Medicinal Products within ANSES, based on the national veterinary pharmacovigilance database.

Most of the reported effects were mild and mainly concerned local reactions at the injection site. General symptoms were also described, as well as musculoskeletal symptoms, episodes of abdominal pain, hypersensitivity reactions and even neurological symptoms.
On the other hand, very few reports mentioned a lack of vaccine efficacy.

Veterinary vaccines are the main cause of adverse effects in animals receiving veterinary treatment [1]; those intended for horses are no exception to the rule.

Today, there are seven valences1 available, either alone or in combination: equine influenza, tetanus, equine rhinopneumonitis, rabies, West Nile fever, strangles and equine viral arteritis.

An earlier study of post-vaccination adverse effects in horses, carried out over the period 2016-2018, had shown that vaccination was well tolerated in these animals, with any reactions mostly being mild and mainly limited to the injection site.

As part of its ongoing monitoring of the benefit-risk balance for medicines, ANSES's French Agency for Veterinary Medicinal Products (ANMV) repeated this study over the next four years (2019-2022), to see whether this tolerability was confirmed.

VERY RARE AND MOSTLY MILD ADVERSE EFFECTS

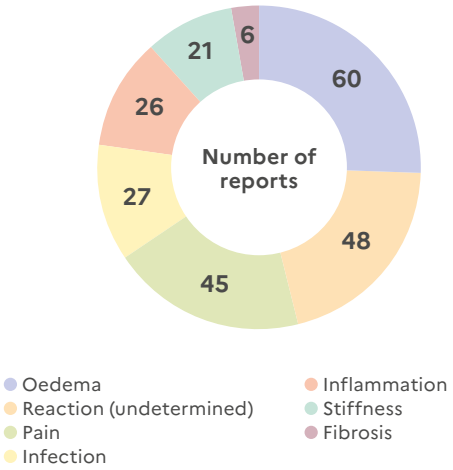
Avec une déclaration enregistrée pour plus de dix mille chevaux vaccinés, l'incidence des effets indésirables post-vaccinaux est qualifiée de très rare.

With one report recorded for more than every ten thousand horses vaccinated, the incidence of post-vaccination adverse effects is considered to be very rare.

Moreover, of the 152 adverse effects reported over the four years of the study, 70% were considered to be non-serious. The majority of reactions (85 cases) were limited to the injection site and included oedema, pain, inflammation and abscess. These local reactions sometimes gave rise to other symptoms, such as neck or gait stiffness. Other effects considered non-serious included allergic reactions such as facial oedema or urticaria, fever, loss of appetite and transient discomfort.

[1] The vaccine valence is the part of a vaccine that provides protection against a single germ. There are monovalent vaccines (against equine influenza, for example) or multivalent vaccines. The latter protect against several germs all causing the same disease (e.g. the vaccine against equine herpes viruses) or against different diseases (e.g. the influenza-tetanus vaccine).

Figure 1: Local reactions



However, it is important to be aware of the risk of serious reactions and to monitor the vaccinated animal closely for 48 hours after vaccination.

In the 45 cases considered serious, anaphylactic-type reactions, as well as neurological symptoms (ataxia, falls, convulsions) and digestive symptoms (abdominal pain), were most commonly observed. Twenty-one deaths were recorded.

The adverse effects of vaccines are all the more serious because they appear rapidly after vaccination. Of the 21 deaths recorded, 15 occurred within 24 hours of vaccination. These figures correlate with the fact that ataxia and falls generally have more harmful consequences for large animals than for species such as cats or dogs, potentially leading to the animals being euthanised. Furthermore, the frequency with which abdominal pains occur, for which the prognosis is often unfavourable, is specific to the equine species.

REPORTS OF LACK OF EFFICACY IN HORSES, A NEGLECTED SPECIES IN PHARMACOVIGILANCE

According to the SIMV2 vaccination observatory, in 2022, around 71% of the one million horses in France had been vaccinated against influenza, 65% against tetanus and 27% against rhinopneumonitis.

In France, equine diseases are monitored by RESPE3 through a network of sentinel veterinary practitioners in the field. They are tasked with reporting any suspected cases of disease they encounter, by sending RESPE information about the case (including the animal's vaccination status) and samples that can be used to confirm the disease.

Despite the regular resurgence of outbreaks in France confirmed by RESPE, particularly equine influenza (2018, 2023) or equine rhinopneumonitis each spring, the ANMV only very rarely receives reports concerning a lack of efficacy of vaccines, which nevertheless also concerns veterinary pharmacovigilance. This is despite the fact that these diseases may have appeared in vaccinated animals, as shown by the information sent to RESPE.

In the absence of official reporting, it remains difficult to quantify the ineffectiveness of vaccination and take the appropriate regulatory measures with regard to the vaccines in question.

AN ADVERSE EFFECTS PROFILE THAT CHANGES LITTLE OVER TIME

The nature and incidence of post-vaccination reactions were similar between the periods covered by the two studies (2016-2018 and 2019-2022), confirming that equine vaccines are well tolerated. However, veterinary practitioners need to understand all the potential risks, both serious and non-serious, in order to make horse owners adequately aware of the possibility of post-vaccination effects and the appropriate monitoring needed, and ensure that the necessary measures are taken beforehand in horses at risk, i.e. those that have already suffered a reaction following injection of a vaccine.

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REFERENCES

[1] SPost-MA surveillance of veterinary medicinal products. 2021 Annual Report. https://www.anses.fr/en/system/files/ANMV-Ra-Pharmacovigilance2021EN.pdf

[2] French Union for the Veterinary Medicinal Product and Reagent Industry
[3] Epidemiological surveillance network for equine diseases: https://respe.net/