|  |  |
| --- | --- |
| Logo AGES | |
| Equine Herpesviruses | |
|  |  |
| 11.07.2025 03:25 Uhr | |

**Equine
Herpesviruses**

**EHV
1,
EHV
4**

Last
change:
10.10.2023

**Profile**

The
equine
herpes
viruses
EHV-1
and
EHV-4
occur
worldwide
in
the
equine
population.
Most
horses
are
latently
infected,
i.e.
without
clinical
symptoms.
Seasonally,
especially
in
winter
and
spring,
clinically
manifest
forms
of
EHV-1
infections
may
occur.

**Occurrence**

Worldwide

**Host
animals**

Horses

**Infection
route**

Transmission
occurs
via
direct
contact
(droplet
infection)
from
infected
animals
or
indirectly
via
grooming
utensils,
equipment,
hands,
clothing,
shoes.
The
pregnant
mother
mare
can
transmit
the
virus
to
the
unborn
foal.
Healed
horses
remain
latently
infected
and
can
sometimes
excrete
the
virus
again
after
reactivation.

**Incubation
time**

The
incubation
period
depends
on
the
form
of
progression.
Neurological
symptoms
usually
appear
4-6
days
after
infection,
sometimes
after
24
hours,
occasionally
much
later.
Abortions
often
occur
weeks
after
infection
of
the
dam.

**Symptoms**

Clinical
cases
may
present
with
three
main
forms:

* Rhinopneumonitis:
  mild
  respiratory
  symptoms
  such
  as
  cough,
  watery
  nasal
  discharge,
  mild
  fever
  at
  onset.
* (Late)
  abortion
  /
  neonatal
  death
* Myeloencephalopathy:
  ataxias
  of
  the
  hindquarters,
  stiff
  gait,
  hindhand
  weakness,
  convulsions,
  recumbency

**Therapy**

A
specific
therapy
is
not
possible.
Diseased
horses
can
only
be
treated
symptomatically.
Affected
horses
of
a
herd
must
be
separated
from
healthy
ones.
In
unaffected
horses,
fever
should
be
measured
twice
daily.
In
healthy
horses
with
existing
vaccination
protection,
a
booster
vaccination
is
recommended.
Herds
with
clinically
affected
horses
should
observe
a
quarantine
period
of
28
days
after
the
last
suspected
infection,
during
which
no
horse
may
re-enter
or
leave
the
herd.

**Prevention**

EHV-1
is
not
notifiable
or
reportable.
Horses
can
be
vaccinated
against
EHV-1
and
EHV-4.
Vaccination
protection
is
only
sufficient
if
all
horses
in
a
herd
are
vaccinated.
Vaccination
mainly
protects
against
respiratory
diseases
caused
by
EHV-1
and
EHV-4
and
reduces
the
risk
of
EHV-1-related
abortions.
A
protection
against
the
occurrence
of
the
neurological
form
by
the
vaccination
could
not
be
proven
so
far.

**Situation
in
Austria**

EHV-1
and
EHV-4
also
occur
in
horse
herds
in
Austria.
In
spring
2021,
outbreaks
with
a
neurological
course
occurred
in
some
herds.

**Technical
information**

The
equine
herpesviruses
are
double-stranded
DNA
viruses
of
the
Herpesviridae
family.
Horses
are
major
hosts
for
EHV-1
through
EHV-5,
while
donkeys
are
the
natural
hosts
for
ASH-1
(alt
EHV-6),
ASH-2
(alt
EHV-7),
ASH-3
(alt
EHV-8),
ASH-4,
ASH-5,
and
ASH-6.

Clinical
disease
is
mainly
caused
by
EHV-1
and
EHV-4
from
the
subfamily
Alphaherpesvirinae.

EHV-3
is
a
venereal
form
of
herpes
transmitted
mainly
by
mating
and
causes
coital
exanthema
with
vesicles,
pustules,
or
erosions
on
the
vulva
or
penis.
An
infection
with
EHV-3
is
notifiable
in
Austria.
Affected
horses
are
virus
carriers
for
life
and
must
be
excluded
from
breeding.
EHV-2
from
the
subfamily
Gammaherpesvirinae
causes
inflammation
of
the
cornea
and
conjunctiva.
However,
EHV-2
and
EHV-3
are
of
little
clinical
significance.
EHV-5
can
cause
various
clinical
courses
such
as
abortions,
dermatitis
or
systemic
granulomatosis.

EHV
have
low
tenacity
in
the
environment
(persistence
less
than
7
days)
and
are
sensitive
to
detergents
and
lipid
solvents.
Latent
infections
occur
due
to
the
ability
of
the
virus
to
evade
the
immune
system.
EHV-1
and
EHV-4
are
considered
antigenically
very
stable
and
show
little
change
in
epitope
structure.
High
viral
loads
are
found
in
aborted
fetal
material.
The
viruses
are
also
found
in
the
cells
of
the
respiratory
tract
as
well
as
in
the
regional
lymph
nodes
and,
in
the
acute
stage,
in
the
blood.

**Symptomatology**

Rhinopneumonitis
presents
with
mild
respiratory
symptoms
such
as
cough,
watery
nasal
discharge
and
mild
fever
at
onset.

Abortions
usually
occur
in
the
last
third
of
pregnancy.
When
infected
foals
are
born,
neonatal
disease
with
respiratory
symptoms
and
liver
dysfunction
with
a
poor
prognosis
may
occur.
The
virus
variant
N752
is
the
main
cause
of
miscarriage.

Myeloencephalopathy
can
occur
both
sporadically
and
epidemically.
In
this
case,
the
viral
variant
D752
as
well
as
the
quantity
of
the
pathogen
play
a
role.
Neurological
symptoms
are
caused
by
a
vasculitis
with
vascular
damage
and
subsequent
death
of
neuronal
cells.
Horses
affected
by
myeloencephalopathy
(paretic-paralytic
form)
show
neurological
symptoms
mainly
in
the
form
of
ataxias
of
the
hindquarters,
stiff
gait
and
hindhand
weakness
after
a
short
fever
phase.
In
more
severely
affected
horses,
convulsions
and
recumbency
occur.
Urination
and
defecation
may
be
difficult.
Head
nerve
function
deficits
are
also
observed
(tilted
head,
drooping
of
the
ear,
eyelid
and
lips
due
to
facial
paralysis).
The
symptoms
often
subside
after
a
few
days
or
weeks.
However,
fatal
courses
also
occur,
especially
if
the
horses
are
stuck
for
more
than
three
days.
Euthanasia
is
then
usually
unavoidable.

**Diagnostic**

In
the
case
of
respiratory
symptoms
caused
by
an
EHV
infection,
it
is
not
possible
to
distinguish
it
from
other
respiratory
diseases.
Therefore,
a
detection
(real-time
PCR,
currently
the
most
common
and
fastest
method)
from
nasal
or
nasopharyngeal
swabs
must
be
performed.
During
the
acute
phase,
the
virus
genome
can
also
be
found
in
EDTA
blood
by
PCR
detection.
In
the
case
of
EHM
(Equine
Herpesvirus-associated
Myeloencepathy,
damage
to
the
brain),
the
disease
can
be
detected
in
the
brain,
spinal
cord
and
cerebrospinal
fluid.

In
EHV-related
abortions,
the
fetus
and
placenta
are
examined
for
pathological
changes
and
the
virus
can
be
detected
in
the
fetal
organs.

Retrospectively,
the
determination
of
antibodies
from
paired
serum
samples
is
possible
for
the
detection
of
EHV
infection.
The
first
serum
sample
should
be
taken
at
the
time
of
illness
at
the
onset
of
the
first
symptoms,
the
second
serum
sample
2-4
weeks
after
the
onset
of
illness
and
should
be
tested
for
EHV-1/-4.
A
titer
increase
of
at
least
four
confirms
a
disease
caused
by
EHV-1
or
EHV-4.

**Contact**

**Institute
for
Veterinary
Medicine
Mödling**

Institut
für
veterinärmedizinische
Untersuchungen
Mödling

E-Mail:vetmed.moedling@ages.at

Phone:[+43
50
555-38112](tel:+43%2050%20555-38112)

Address:
Robert
Koch-Gasse
17  
2340
Mödling