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| --- | --- |
| Logo AGES | |
| Porcine epizootic diarrhea | |
|  |  |
| 09.05.2025 14:42 Uhr | |

**Porcine
epizootic
diarrhea**

**PED**

Last
change:
19.12.2024

**Profile**

Porcine
epizootic
diarrhea
(PED)
is
a
diarrheal
disease
of
pigs
caused
by
coronaviruses
that
can
be
associated
with
a
high
mortality
rate,
especially
in
young
piglets.
There
is
no
risk
of
infection
for
humans
or
other
domestic
animals

**Occurrence**

Worldwide

**Host
animals**

Pigs

**Infection
route**

Infection
occurs
through
virus-containing
feces

**Incubation
period**

3-5
days

**Symptomatology**

Vomiting,
diarrhea,
loss
of
appetite

**Therapy**

There
is
no
therapy

**Prevention**

Strict
biosecurity
or
hygiene
measures.
Vaccines
are
already
available
in
Asia
and
America,
but
their
efficacy
is
the
subject
of
controversial
debate.

**Situation
in
Austria**

PED
virus
was
detected
for
the
first
time
in
Austria
at
the
end
of
2014.

**Specialist
information**

Porcine
epizootic
diarrhoea
(PED)
or
epizootic
viral
diarrhoea
(EVD)
is
a
diarrhoeal
disease
of
pigs
caused
by
coronaviruses,
which
can
be
associated
with
a
high
mortality
rate,
particularly
in
young
piglets.
Epidemic
outbreaks
of
PED
have
been
reported
in
North
America
since
2013.
Acute
outbreaks
were
reported
in
Germany
in
2014;
in
Austria,
the
virus
was
detected
in
one
farm
in
fattening
pigs
of
German
origin:

Only
pigs
are
susceptible
to
this
virus;
there
is
no
risk
of
infection
for
humans
or
other
domestic
animals.
Infection
occurs
through
faeces
containing
the
virus
via
the
faecal-oral
route
of
infection.
After
experimental
infection,
the
first
signs
of
illness
can
appear
after
just
36
hours.
If
the
pathogen
is
introduced
into
a
naive
herd,
the
typical
signs
of
disease
are
visible
within
3-5
days.

**Spread**

PED
virus
was
first
detected
in
Austria
at
the
end
of
2014.
The
detection
and
molecular
biological
determination
of
the
virus
was
carried
out
at
the
Institute
for
Veterinary
Investigations
of
AGES
in
Mödling.
The
case
report
on
this
first
occurrence
of
PED
in
Austria
was
published
in
January
2016
in
the
journal
BMC
Veterinary
Research
(Steinrigl
et
al.,
First
detection,
clinical
presentation
and
phylogenetic
characterisation
of
Porcine
epidemic
diarrhea
virus
in
Austria,
BMC
Veterinary
Research
(2015)
11:310
DOI
10.1186/s12917-015-0624-1).

Diarrhoeal
diseases
similar
to
PED
were
first
observed
in
England
in
1971
in
fattening
pigs
and
subsequently
spread
to
several
European
countries.
There
are
reports
from
Belgium
(1978),
the
Czech
Republic
(1993),
Hungary
(1996)
as
well
as
from
Germany,
France,
the
Netherlands
and
Switzerland.
After
that,
there
were
hardly
any
outbreaks
of
the
disease
in
Europe
-
and
if
so,
only
isolated
ones.

PED
outbreaks
have
been
reported
in
Korea,
China,
Thailand
and
other
Asian
countries
since
2000
and
continue
to
the
present
day.
Since
2010,
outbreaks
with
high
mortality
rates
in
piglets
have
increased
significantly
in
these
countries.
In
2013,
the
first
cases
of
PED
occurred
in
the
US
states
of
Iowa
and
Minnesota.
Within
a
short
period
of
time,
further
outbreaks
were
recorded
throughout
the
USA,
Canada,
Mexico
and
the
Central
American
states.
Molecular
genetic
analyses
of
the
virus
revealed
a
new
variant
of
the
PED
virus
(PEDV)
in
America
and
Asia,
which
appears
to
be
more
virulent
than
the
virus
originally
isolated
in
Europe
in
the
1980s.
In
addition,
a
new
coronavirus
(deltacoronavirus)
was
detected
in
the
course
of
genetic
analyses,
which
may
also
be
involved
in
the
disease.

Acute
outbreaks
in
Germany
initially
affected
fattening
pigs,
but
later
also
suckling
piglets.
Mortality
was
low
in
fattening
pigs,
but
up
to
70
%
in
suckling
piglets.
All
available
sequencing
from
the
acute
cases
that
occurred
in
Germany
show
a
high
genetic
similarity
to
the
less
pathogenic
variant
of
the
strains
that
occurred
in
the
USA.
At
present,
cases
of
the
disease
in
fattening
herds
are
mainly
described
during
the
cold
season.

**Symptoms**

The
clinical
manifestation
of
the
disease
symptoms
and
their
course
are
strongly
dependent
on
the
age
of
the
affected
animals
and
the
immunity
status
of
the
herd
and
are
described
as
follows:

* If
  the
  animals
  in
  a
  herd
  had
  no
  contact
  with
  the
  virus
  before
  the
  virus
  was
  introduced
  (so-called
  naive
  or
  fully
  susceptible
  herd),
  the
  following
  symptoms
  are
  seen
  in
  suckling
  piglets
  (1-28
  days
  of
  life):
  Almost
  100%
  of
  the
  animals
  fall
  ill
  with
  vomiting;
  the
  piglets
  have
  acute
  watery
  diarrhoea.
  As
  a
  result
  of
  the
  severe
  loss
  of
  fluids
  and
  the
  resulting
  acidosis
  (hyperacidity
  of
  the
  blood),
  50-80%
  of
  the
  piglets
  can
  die
* If
  the
  animals
  are
  already
  older,
  far
  fewer
  animals
  die
  (1-3%).
  Symptoms
  of
  diarrhoea
  and
  loss
  of
  appetite
  can
  be
  observed
  in
  pigs
  of
  all
  ages,
  including
  breeding
  sows
* Once
  the
  herd
  has
  overcome
  the
  acute
  disease
  (so-called
  endemic
  disease),
  the
  animals'
  performance
  almost
  returns
  to
  normal
  and
  diarrhoea
  only
  occasionally
  occurs
  in
  older
  or
  weaned
  piglets
  (3rd-6th
  week
  of
  life).

**Prevention**

As
the
virus
is
mainly
transmitted
through
infected
pigs,
faeces
or
objects
contaminated
with
faeces
(manure,
shoes,
transport
vehicles),
strict
biosecurity
and
hygiene
measures
such
as
cleaning
and
disinfection
of
contaminated
stables,
objects
and
means
of
transport
must
be
observed.
Of
course,
precautionary
measures
take
centre
stage,
especially
when
moving
animals
from
affected
stables
or
regions
to
unaffected
countries
and
regions.
Vaccines
are
already
available
in
Asia
and
America,
although
their
effectiveness
is
the
subject
of
controversial
debate.

**Diagnostic**

Based
on
the
clinical
symptoms
in
a
foci,
only
a
tentative
diagnosis
can
be
made,
which
must
be
confirmed
by
appropriate
laboratory
testing.
Using
modern
molecular
biological
methods
(PCR),
rapid
and
reliable
diagnostics
are
possible
to
clarify
suspected
cases.

The
following
sample
materials
are
suitable
for
diagnostics:

* Feces
  from
  acutely
  ill
  live
  animals
* intestinal
  contents
  and
  intestinal
  tissue
  (small
  intestine,
  large
  intestine)
  from
  dead
  animals

The
feces
should
be
chilled
(4
°C)
and
taken
within
the
first
24
h
after
the
onset
of
diarrhea.
Since
intestinal
tissue
becomes
autolytic
relatively
quickly,
organ
samples
or
dead
animals
should
be
brought
or
shipped
to
the
laboratory
as
quickly
as
possible
and
refrigerated.

Differential
diagnosis
should
exclude
various
other
diarrheal
pathogens:

* Bacterial
  infections
  caused
  by:
  *Escherichia
  coli*,
  *Clostridium
  perfringens*,
  Salmonella.
* Viral
  infections
  caused
  by:
  transmissible
  gastroenteritis
  virus
  (TGE),
  rotavirus,
  circovirus
  type
  2
  (PCV-2),
  classical
  swine
  fever
  virus
  (CSF)
  and
  African
  swine
  fever
  virus
  (ASF).
* Parasite
  infestation:
  coccidia

**Contact**

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for
Veterinary
Medicine
Mödling**

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