Epidemiological Studies on Trichinellosis among Swine, Wild Boars and Humans in Poland

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Summary:
The introduction of the digestion method (the magnetic stirrer type) resulted directly in the reduction of Trichinella sp. infection among people in Poland. Pork and its products are still the main cause of human trichinellosis in Poland. However, epidemics caused by eating wild boar meat suggested that this way of the transmission of Trichinella sp. larvae to humans might be of considerable importance.

KEY WORDS: Trichinella, wild boar, pig, Poland.

Trichinellosis is one of the most important parasitic zoonoses in the world. It is still a disease of epidemiological importance in Poland and every year some seropositive cases are found among people (Adenajlo et al., 1993; Duffy et al., 1985). In Poland, the adaptation of an artificial digestion method for pig and wild boar meat (van Knapen et al., 1980; Köhler, 1979) has been introduced in slaughterhouses to prevent human Trichinellosis infection. Some questions are connected with the incidence of Trichinella sp. infection sources among pigs. The aim of the studies was to investigate the prevalence of Trichinella sp. among pigs and wild boars and seropositive cases among people in Poland in the years 1993-1998.

MATERIAL AND METHODS

In the years 1993-1998 an analysis of data of Trichinella occurrence in pork and wild boar meat was carried out, on the basis of annual reports obtained from the Ministry of Agriculture and Food Economy. At that time the total number of 97,193,480 pork and 309,040 wild boar meat samples were examined for Trichinella infection using the artificial digestion method with our adaptation. The Trichinella sp. seropositive cases among people were examined by the ELISA test. Between 1993-1997, people in forty-seven foci and fifty individual persons were examined for Trichinella antibodies using ELISA.

RESULTS AND DISCUSSION

Epidemiological studies conducted in Poland between 1993-1998 showed a drop in the number of Trichinella cases among pigs and wild boars (Table I). In the years 1997-1998 6.3 times less infected with Trichinella pigs and 2.7 times less infected wild boars were found as in the years 1993-1994. The digestion method (the magnetic stirrer type), according to Köhler (1979; 1977) and Ramisz et al. (1996), was introduced in Poland in 1987. According to Van Knapen (1980) this method is about three times more sensitive than traditional trichinoscopy. It should be noted that the introduction of the digestion method resulted directly in the reduction of Trichinella infection among humans. In 1997 only 20 Trichinella seropositive persons were found. It means that the number of the infected persons is four to five times smaller than in the years 1993-1994 (Table II).

Pork meat is still the main source of human Trichinellosis in Poland. In the years 1993-1997 about 75.3 % of clinical cases were caused by the consumption of pork meat or its products. Wild boar meat was the source for 24.7 % of cases of Trichinellosis. It is worthy to note that all these clinical cases were caused by meat that had not been examined.

The question is how pigs become infected. The important role of garbage feeding for Trichinella infection among swine was emphasised by Kozar et al. (1965) in the sixties. Leighty (1983) has analysed the role of garbage feeding in the USA. He has concluded that this type of feeding was responsible for most swine infections in the USA. An analysis carried out in Poland in the years 1983-1986 confirmed that garbage feeding was the main cause of swine trichinellosis, too. T. spi-
<table>
<thead>
<tr>
<th>Year</th>
<th>Number of foci</th>
<th>Individual infection</th>
<th>Number of seropositive persons</th>
<th>Cause of infection</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>(number of patients)</td>
<td></td>
<td></td>
<td>Pork meat</td>
</tr>
<tr>
<td>1993</td>
<td>16 (74)</td>
<td>15</td>
<td>89</td>
<td>74</td>
</tr>
<tr>
<td>1994</td>
<td>11 (106)</td>
<td>11</td>
<td>117</td>
<td>96</td>
</tr>
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<td>1995</td>
<td>8 (78)</td>
<td>7</td>
<td>85</td>
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<td>1996</td>
<td>10 (33)</td>
<td>8</td>
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<td>21</td>
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<td>1997</td>
<td>2 (11)</td>
<td>9</td>
<td>20</td>
<td>15</td>
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Table II. – Epidemiological data on *Trichinella* infection among patients detected by ELISA in Poland in the years 1993-1997.

*Trichinella spiralis* larvae were found in about 70 to 75% swine fed on the carcasses of breeding foxes. Large-scale studies in Poland (Seroka, 1997) and in the USA (Ramisz & Balicka-Laurans, 1980) proved that the role of rats in the epidemiology of trichinellosis was overestimated. Studies conducted by Ramisz & Balicka-Ramisz (1996) showed that in some cases rats could be the cause of infection among swine on production farms.

REFERENCES


