

Inoculating Children Makes Sense

International experts recently achieved new consensus regarding Tick-Borne Encephalitis (TBE) in childhood

“TBE in children generally runs a milder course, but severe cases of the illness can occur, and the neuro-psychological consequences can be so severe as to lead to permanent curtailment of quality of life”, according to one of the core resolutions of the Consensus on which experts from numerous European countries have agreed within the framework of the 6th Meeting of the International Scientific Working Group on Tick Borne Encephalitis (ISW TBE) in Tyrol. The experts provided an overview of the epidemiological situation and age distributions in their own countries and discussed the degree of severity among children, with recommendations regarding inoculation schedules and programmes as well as dosages being put forward, a new analysis of the protection rate of TBE inoculation being presented, and, last but not least, light being cast on the ethical aspects of inoculation in childhood.

TBE also among infants

A total of 22 TBE experts from Germany, Estonia, Finland, Latvia, Lithuania, Austria, Russia, Slovenia, Sweden, Switzerland, the Czech Republic, and Hungary presented the latest epidemiological data at this year’s ISW TBE meeting. During the proceedings it became clear that apart from Austria there are still considerable numbers of cases being registered today in all these countries, from the known high-epidemic nations of the Baltic and Russia, where between 5,000 and 10,000 TBE cases occur each year, and on to the Scandinavian countries and to Germany and the Czech Republic. There are TBE cases encountered even in Italy. As well as this, it was shown that in TBE-endemic countries in which no immunisation programmes are applied adults as well as children are affected. The incidence among children increases with age, with the lowest being among children under the age of three. Boys showed a higher incidence than girls in all age groups.

In some countries the incidence among children is comparatively high, and in Estonia in the 0-19 age group it amounts to 24 percent. It must also be emphasised, however, that Europe-wide cases are increasingly being encountered in the 0-3 age group as well.

The incidence of TBE among infants is admittedly relatively low due to their restricted activity outdoors, and there are indications that the disease takes a generally milder course. On the other hand, acute infection among European children between 1 and 15 years of age is still severe in 25 percent of cases, as the results of one German study show. Severe consequential manifestations (sequelae) among children are rare, at 2 percent, in comparison with the 45 –percent risk of sequelae among adults. One restrictive factor to be noted, however, is that in studies hitherto only a part of all such possible manifestations have been recorded.

Most frequently presented among children in clinical terms are meningitis (68 %), followed by encephalitis (31 %), and myelitis (0.7 %).

Symptoms of sequelae in children:

Headaches

Sleep/concentration disturbances

Vertigo

Fatigue

Epileptic disorders

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Changing Endemic Areas

It has long been known that the prevalence of the virus is generally subject to fluctuations depending on the time of year and the geographical location. New study results from Germany now show that the geographical prevalence can evidently change substantially even within one month, with not only new endemic areas coming into being but formerly endemic areas becoming virus-free. This means that endemic areas are by no means so readily or reliably definable as had hitherto been assumed. Together with an increasingly more mobile lifestyle, this means that in specific cases there is an even higher risk of infection.

Success thanks to Inoculation Programme

What consistent inoculation programmes can achieve is in turn shown by a comparison between Austria and the Czech Republic. The geographical and climatic conditions prevailing in the two countries are broadly similar, but the incidence of TBE cases in the Czech Republic is unequally higher.

The favourable epidemiological situation in Austria is the result of an inoculation programme which now goes back twenty years. As the Austrian inoculation expert

and Chairman of the Consensus Meeting, Univ. Prof. Dr. Ingomar Mutz pointed out, the sustained success of the Austria inoculation programme was apparent not least among children: “Before the programme started, during the period from 1971 to 1980, there were a total of 92 cases in Austria among children aged from 0-6. By contrast, during the period from 1990-2000 we encountered only 29 instances. Thanks to comprehensive inoculation, TBE cases in this age group occur nowadays only rarely.” No wonder: In Styria, one of the highly-endemic regions of Austria, the inoculation rate in the 1-3 age group is more than 57 percent, and at school age well over 90 percent.

New Analysis of Protection Rate among Children

Another element which found its way into the Consensus Statement was the result of an analysis from the Institute for Virology at the University of Vienna. On the basis of case records with an attested history of inoculation, a rate of protection of 96.3 percent was determined among children between 0 and 6, which, in view of the excellent tolerance of the vaccine, must be seen as a further argument for the inoculation even of infants. The experts were also unanimous in the recommendation that basic immunisation, depending on the individual risk, should be considered as from the first year of life, and in special cases even from the age of six months. As the standard regime, a basic immunisation of three doses at intervals of 1-3 and 9-12 months is recommended, with the first booster after three years, and each further after 3-5 years. For the inoculation of children special forms of administration should be used, with half the antigen dose.

Right to Preventive Care

Finally, there was also discussion about the ethical aspects of inoculation in childhood, and the Consensus Statement also adopted, among other things, a reference to the UNO Convention on the Rights of Children.

“Children”, the experts say, “have a right to the best possible care from their parents or those responsible for looking after them. Accordingly, the moral duty of the parents or carers, applying a reasonable weighing of risks and benefits, is to provide and ensure that their children have the opportunity to obtain the recommended and necessary medications and inoculations. Among children who live in endemic areas or travel into them, this should include immunisation against TBE.”

Tick Borne Encephalitis (FSME)

TBE caused by a Flavivirus is one of the main causes of viral encephalitis in many European countries and in the Russian part of Asia. In countries in which TBE is endemic, and in which pre-emptive inoculation is not provided, both children and adults are affected.

In general, the course of the illness is milder among children, but severe cases of the illness can occur, and the neuro-psychological consequences can be so severe as to lead to permanent curtailment of quality of life.

There is at present no known effective therapy for TBE, but the disease can be successfully pre-empted by active immunisation.

Prevention by special clothing and/or tick repellents is not reliable enough. TBE-specific hyperimmunoglobulin for post-exposure prophylaxis is regarded in many countries as not safe enough, and is accordingly not available in these countries.