Comment to "Aseptic meningitis after vaccination with L-Zagreb mumps strain - virologically confirmed cases" faulty calculation of rates

Tešović, Goran; Lesnikar, Vladimira; Begovac, Josip

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«Aseptic meningitis after vaccination with L-Zagreb mumps strain – virologically confirmed cases

Faulty calculation of rates - Comment»

Authors:

Goran Tešović, MD, PhD, University Hospital for Infectious Diseases, Mirogojska 8, 10 000 Zagreb, CROATIA

Tel. ++385(1) 46 03 405, fax. ++385(1) 46 03 158

e-mail: goran.tesovic@zg.htnet.hr

Vladimira Lesnikar, MD, Zagreb Public Health Institute, Mirogojska 16, 10 000 Zagreb, CROATIA

Professor Josip Begovac, MD, PhD, University Hospital for Infectious Diseases, Mirogojska 8, 10 000 Zagreb, CROATIA

Dear Sir,

We have read with interest Dr Kaić´s letter in January 27th issue of your journal regarding our study on virologically confirmed cases of aseptic meningitis (AM) following Leningrad-Zagreb (L-Z) mumps strain primovaccination (1, 2).

As we understood, Dr Kaić´s criticism is focused on two points: (a) the study is hospital-based and (b) the authors do not know the precise denominator (1).

Although, according to Dr Kaić´s statement, „the incidence rates cannot be derived from hospital-based data“, hospital-based incidence data have been a valuable source of information for many years and for many different disorders ranging from diarrhoea to stroke. A quick PubMed search reveals 8794 citations on hospital based incidence data. There are also several studies on the incidence of postvaccinal AM following MMR vaccination, that were partly, or fully hospital-based (3, 4, 5). Dr Miller´s study which included hospital data from the Oxford region, England, and the Fujinaga study based on hospital data from Gunma Prefecture, Japan were crucial in lightening the problem of postvaccinal AM after Urabe Am 9 mumps strain vaccination (4, 5). Investigating the incidence of AM after MMR immunization with Urabe containing vaccine using new method for active post-marketing surveillance of vaccine safety based on patient records in England, Farrington finds similar postvaccinal AM incidence as the Oxford study (6). So, the problem, from our point of view, is not hospital source of data, but methodology (active *versus* passive surveillance) used in calculating the incidence of postvaccinal events. Passive reporting of postvaccinal adverse events severely underestimates the true incidence of postvaccinal AM (4, 7). Comparing the incidence of postvaccinal AM in the Zagreb metropolitan area that we found by active surveillance in the 8-year period with the data from the rest of Croatia based on passive surveillance, what dr Kaić has done, is simply wrong. The comparison of data from active surveillance with data based on passive reporting of adverse events is methodologically incorrect and does not permit one to conclude that the majority of AM cases in Croatia happened in one fourth of the national population. The figures that Dr Kaić has cited can be used to support our opinion that AM following L-Z vaccination is not a rare event but rarely recognized by clinicians outside Zagreb and thus significantly underreported.

Dr. Kaić claims that we do not know the denominator. This statement is probably based on the speculation that „it is not only persons from the Zagreb area who get to be hospitalized in the University hospital“ (1). We can, of course, confirm that our hospital serves as a tertiary care facility for infectious diseases for the whole Croatian population, but

it primarily serves the Zagreb metropolitan area. In describing the design of our study we stated that „all patients came from the Zagreb metropolitan area“. This means that all children with AM following mumps vaccination with L-Zagreb diagnosed at our institution who did not reside in the Zagreb metropolitan area were excluded from the study. Therefore, the incidence of postvaccinal AM was calculated based on the number of vacinees in Zagreb and its vicinity (2). Kaić´s argument on unknown or faulty denominator therefore does not stand.

In conclusion, in our recent prospective investigation performed for the Zagreb metropolitan area, postvaccinal AM was diagnosed by detection of the vaccine virus in cerebrospinal fluid and a well defined denominator was used for calculating the incidence rate. By doing so we overcame the disadvantages of our previous retrospective study (8). If our incidence rate of postvaccinal AM following L-Z immunization is questionable for the Croatian health care authorities, our results can be checked in a national-based study. However, in correct assessment of postvaccinal AM incidence, exact diagnosis of meningitis, as well as active surveillance are necessary.

References

(1) Kaić B. Aseptic meningitis after vaccination with L-Zagreb mumps strain – virologically confirmed cases. Faulty calculation of rates. Vaccine 2007;25:1159-60.

(2) Tešović G, Lesnikar V. Aseptic meningitis after vaccination with L-Zagreb mumps strain – virologically confirmed cases. Vaccine 2006;24:6371-3.

(3) Čižman M, Mozetič M, Radešček-Rakar R, Pleterski-Rigler D, Sušec-Michieli M. Aseptic meningitis after vaccination against measles and mumps. Pediatr Infect Dis J 1989;8:302-8.

(4) Miller E, Goldacre M, Pugh S, Colville A et al. Risk of aseptic meningitis after measles, mumps and rubella vaccine in UK children. Lancet 1993;341:979-82.

(5) Fujinaga T, Motegi Y, Tamura H, Kuroume T. A prefecture-wide survey of mumps meningitis associated with measles, mumps and rubella vaccine. Pediatr Infect Dis J 1991;10:204-9.

(6) Farrington P, Pugh S, Colville A et al. A new method for active surveillance of adverse events from diphteria/tetanus/pertussis and measles/mumps/rubella vaccines. Lancet 1995;345:567-9.

(7) Balraj V, Miller E. Complications of mumps vaccines. Rev Med Virol 1995;5:219-27.

(8) Tešović G, Begovac J, Baće A. Aseptic meningitis after measles, mumps and rubella vaccine. Lancet 1993;341:1541.