

A scientific fraud with tragic consequences: The MMR vaccine and autism

In Anglo-Saxon countries, a telling case began in 1998 with a publication (which proved fraudulent) of Dr. Andrew Wakefield in the famous medical journal *The Lancet* in 1998 [1]. The latter attributed mumps and rubella (the **MMR vaccine**) to measles vaccine as the possible cause of intestinal inflammation and **autism**. This publication was based on the observation of 8 children with intestinal inflammation. These children had received the MMR vaccine. Dr. Wakefield suggested the vaccine of causing inflammation and **autism**.

The publication of the article was followed by a press conference, during which Dr. Wakefield proposed to vaccinate separately against measles, mumps and rubella and no longer use the combined vaccine. The case gained media coverage in 2001 when Wakefield published other articles suggesting that the measles vaccine could replicate in the digestive tract and cause inflammation, particularly in children with autism [2].

These results were widely reported in the media and the controversy grew in the United Kingdom. The BBC broadcast a television programme entitled "MMR: the question of choice". Three parents of children with autism were invited to testify about their child's MMR vaccination. The media, of course, did not repeat the epidemiological studies that showed on a large number of people that the MMR vaccine did not induce any disorder in the child's mental development. The MMR was simply given to children at an age when autism was diagnosed, since the vaccine was given between 12 and 18 months of age. This was the moment when the child began to speak and interact verbally. It was therefore normal that children with developmental disabilities were diagnosed at the same time as they received the vaccine, as were the millions of other children. It was simply a temporal coincidence for the unfortunate parents of sick children, not a scientific demonstration of causality. Again, there was a **temporal coincidence** and **not causality**.

THE LANCET

The Lancet, Volume 351, Issue 9183, Pages 437 - 441, 28 February 1998
doi:10.1016/S0140-6736(97)11096-0

This article was retracted

RETRACTED: Ileal-lymphoid-nodular hyperplasia, non-specific colitis, and pervasive developmental disorder in children

Dr AJ Wakefield FRCS ¹, SH Murch MB BSc, A Anthony MB BSc, J Linnell PhD ², DM Casson MRCP BSc, M Malik MRCP BSc, H Bernstein FRCPsych ³, AP Dhillon MRCPsych ⁴, MA Thomson FRCP BSc, P Harvey FRCP BSc, A Valentine FRCP BSc, SE Davies MRCPsych ⁵, JA Walker-Smith FRCP BSc

Summary

Background

We investigated a consecutive series of children with chronic enterocolitis and regressive developmental disorder.

Methods

12 children (mean age 6 years [range 3–10], 11 boys) were referred to a paediatric gastroenterology unit with a history of normal development followed by loss of acquired skills, including language, together with diarrhoea and abdominal pain. Children underwent gastroenterological, neurological, and developmental assessment and review of developmental records. Ileocolonoscopy and biopsy sampling, magnetic resonance imaging (MRI), electroencephalography (EEG), and lumbar puncture were done under sedation. Barium follow-through radiography was done where possible. Biochemical, haematological, and immunological profiles were examined.

Figure 1. Figure illustrating the 1998 Lancet article describing 12 cases of children with autism who were vaccinated with the MMR vaccine in the United Kingdom. The media relayed this information to the general public, suggesting that a link was plausible. In 2010 the General Medical Council published a report implicating Dr. Wakefield, the first author of the publication, and showing that the description of cases in the publication did not match children's records. The Lancet removed this article from the literature.

In April 2004, a *Sunday Times* reporter reported that in 1998 Wakefield received £55,000 from lawyers defending parents suing vaccine manufacturers. Wakefield's co-authors withdrew from the article, which meant that they no longer supported its scientific content. The chief editor of the *Lancet* stated that Wakefield should have declared his conflict of interest that would have blocked publication. The *General Medical Council* (equivalent to the Conseil de l'ordre des médecins in France) launched an investigation that led to the prosecution of Dr. Wakefield in 2007. In 2009, the same *Sunday Times* reporter announced that Wakefield had manipulated the data to write his article. In other words, he had lied. The *General Medical Council* definitively condemned Wakefield in 2010 for his dishonest and inappropriate medical practices. In the process, *The Lancet* retracted the article.

Wakefield was expelled from England and now works in the United States. In 2011, an investigation revealed that Dr. Wakefield was planning to start a start-up based on his pseudo-discovery. He had patented a diagnostic system for "autistic colitis" and was about to sell diagnostic kits. However, the MMR infant vaccine has largely proven its safety with its use for more than thirty years on billions of children.

On the other hand, the controversy has left its mark and left innocent victims. Between 1996 and 2002, the MMR vaccination rate dropped from 91.8% to 81% in England and Wales. In some regions, particularly London, the coverage rate has fallen to less than 60%. It was more than enough for measles to get back. In 2006, the incidence of measles (the number of cases per year) was 37 times higher than in 1996. In 2008, for the first time in 14 years, measles became endemic again in England, causing one death every 10,000 cases. Finally, one of the most serious complications associated with measles is sclerosing subacute panencephalitis (SSPE: long-term fatal progressive encephalitis) whose risk was estimated at 1:100,000 cases [3] [4] [5] in the last four decades. A recent analysis shows much higher values on cases recorded between 2003 and 2009, especially among children under five with measles (1:1,700 cases to 1:3,300 cases) [6].

According to an estimate by the CDC (Centers for Diseases Controls, Atlanta), measles vaccination will have prevented (between 1994-2013) 322 million cases of measles disease, 21 million hospitalizations and 732,000 deaths due to measles, representing a direct cost saving of approximately US\$295 billion.

References and notes

Cover image. [Source: Public Domain]

[1] Eggerston L (2010) Lancet retracts 12-year-old article linking autism to MMR. Can Medical Assoc J vol. 182 no. 4 First published February 8, 2010, doi: 10.1503/cmaj.109-3179. vaccines <http://www.cmaj.ca/content/182/4/E199.full.pdf+html>

[2] Wakefield AJ (2002) Enterocolitis, autism and measles viruses. [Mol Psychiatry](#). 7 Suppl 2:S44-6.

[3] Modlin et al Pediatrics 1977

[4] Miller et al Int J Epidemiol (1992)

[5] Miller et al Arch Dis Child (2004)

[6] Schönberger et al Pos ONE (2013)

L'Encyclopédie de l'environnement est publiée par l'Université Grenoble Alpes.

Les articles de l'Encyclopédie de l'environnement sont mis à disposition selon les termes de la licence Creative Commons Attribution - Pas d'Utilisation Commerciale - Pas de Modification 4.0 International.
