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EDITORIAL

Vaccines: back to the future

Over the past year, my professional life has become dominated by 'new' viruses threatening humans. Yet these are not novel agents recently discovered but viruses thought long gone and either consigned to history or on the verge of being so designated; namely smallpox and measles. The stories of their reawakening illustrate that the public have difficulties in assessing concepts of coincidence and risk.

Despite being one of the most safe and effective viral vaccines in our armamentarium, the name 'MMR' has plunged to new depths of opprobrium in the UK. The possibility that MMR might trigger autism was suggested by a surgeon who had seen 12 cases in children, 8 of whom had received the vaccine [1]. This disease of unknown aetiology [2] has increased in incidence during the 1980's and 1990's, at least partly due to better ascertainment [2–5]. It presents typically in the second and third years of life [4,6] so providing an opportunity for coincidental association with a vaccine administered routinely at this time. Furthermore, the recent detection of measles RNA by RT-PCR in ileal biopsies from such children [7] is more suggestive of another 'commensal virus' [8] than a pathogen. The possibility that the MMR vaccine might provoke autism has been rejected by major scientific investigations from multiple countries designed to test this proposition [3–6,9–11]. Despite this, the surgeon concerned and some members of the public [12] are not prepared to accept this conclusion. Public Health authorities should always be prepared to investigate thoroughly any new reports of possible adverse events of vaccination and should take action to reduce hazards whenever these are confirmed eg the withdrawal of mumps vaccine containing the Urabe strain [13] and the changeover to killed polio vaccine [14]. In return, proponents of potential vaccine complications should acknowledge when their well-intentioned initial case reports [1,15] have been overwhelmed by new scientific information [3–6,9–11]. The subject of immunisation has always been at risk of politicisation, as evidenced by the 'antivacks' in Jenner's time [16]. Where can the concerned parent turn for advice which is unbiased and able to help them find a path through a maze of information which is often technical in nature?

Public health officials often produce websites and booklets which contain large amounts of factual information. The glossy presentation of 'alternative' websites may beguile the internet surfer into believing that everything written is credible, but some of the data presentations, analyses and opinions expressed are of dubious validity. However, one has to ask why the poor uptake of MMR vaccine is a British problem when there is worldwide access to these websites. One possibility is that the UK population has lost confidence in their public health officers, politicians and scientific experts. Remember, these were the types of professionals who gave reassuring messages about the safety of 'British Beef' prior to detection of the first case of variant Creutzfeld-Jakob Disease, the human form of Bovine Spongiform Encephalopathy [17]. Once discredited, it may well take generations of hard work to regain the confidence and trust of a population that has developed a cynical distrust of reassuring messages.

In contrast, members of the public are requesting vaccination with vaccinia despite this being the least safe of the licensed viral vaccines deployed in the 20th Century. The historical record attests to the efficacy of vaccination [18] or revaccination [16] with vaccinia as a way of bringing smallpox epidemics under control. Yet epidemiological studies also reveal that the incidence of side effects is high including those such as vaccinia encephalitis and vaccinia gangrenosa which are often fatal. The risk of reimmunising front line clinical staff senior enough to have received vaccinia in the past, seems relatively low but all other possible uses have relative

advantages and disadvantages which are hotly debated [19,20]. The public should be concerned that many experts have reservations about the safety of vaccinia vaccine, yet many lay people appear ready to come forward for vaccination.

In this new era, physicians will have to learn (or relearn) how to diagnose measles and smallpox. The public will have to reconsider how they perceive the safety of vaccines, as compared to the safety of everyday activities such as crossing the road, and decide on the levels of side effects they would consider acceptable. Since there is no absolute measure of vaccine safety, we perversely may see the public queuing to demand access to an inherently unsafe vaccine for themselves (and their children?) for protection against an uncertain enemy while refusing to protect their children (and those of their neighbours) against a real and present danger by means of a modern vaccine which meets current safety requirements.

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