



Risks Associated with Vaccines

By Lucija Tomljenovic, PhD

The use of aluminium adjuvants in vaccines and the current standard worldwide pediatric practices of repetitively injecting multiple vaccinations simultaneously have never been properly evaluated for safety by the health regulatory authorities.

Aluminum adjuvants have been used in vaccines for more than 90 years. To date regulators have 'presumed' the safety of aluminum adjuvants, as shown by the following statement made in 2005 by the World Health Organization (WHO) Special Committee on the Safety of Vaccines:^[1]

The Committee considered the safety of adjuvants used in vaccines. This hitherto neglected subject is becoming increasingly important given modern advances in vaccine development and manufacture.

What should be obvious from the above is that the current *presumed* evidence of safety of aluminum adjuvants has never been scientifically established as is widely thought. Instead, we have **clear evidence of negligence regarding this subject by the world's highest health authority.**

In direct contrast to this assumption of safety, research from independent sources (i.e., not sponsored by the vaccine manufacturers) shows evidence that **aluminum in vaccine-relevant exposures can be toxic to humans and animals.**^[2-12]

Popular assertions are that children obtain much more aluminum through regular diet than from routine vaccination and therefore, vaccination does not represent a toxicological risk with respect to aluminum.^[12, 13] **Although such opinions appear to be highly regarded, they contradict basic toxicological principles.**

For example, it should be obvious that a route of exposure which bypasses the protective barriers of the gastrointestinal tract and/or the skin will require a much lesser dose to produce a toxic outcome.^[15] In the case of aluminum, **research clearly shows that only ~0.25 % of dietary aluminum is absorbed into systemic circulation,**^[16] **while aluminum from vaccines may be absorbed at nearly 100% efficiency.**^[17]

Macrophagic myofasciitis (MMF) is one of the post-vaccinal conditions that has been solidly linked to the long-term persistence of vaccine derived-aluminum adjuvants for up to 8-10 years following vaccination.^[18] The pathological significance of the MMF lesion has long been ill-understood because of the lack of an obvious link between persistence of aluminum agglomerates in macrophages at sites of previous vaccinations and the delayed onset of systemic and neurological manifestations.

However, **recent experiments in animal models have revealed that injected nano-aluminum adjuvant particles have a unique capacity to travel to distant organs including the spleen and the brain**^[7] **and incite deleterious immuno-inflammatory responses in neural tissues.**^[3, 4, 7-10] Moreover, **the Trojan horse mechanism** by which aluminium enters the brain, **results in a slow accumulation and is likely responsible for cognitive impairments associated with administration of aluminium-containing vaccines.**^[5, 6]

The bio-accumulation of aluminium in the brain appears to occur at a very low rate under normal conditions, thus potentially explaining the presumably good overall tolerance of this adjuvant despite its strong neurotoxic potential.

Nonetheless, according to Khan et al. ^[7] **continuously increasing doses of the poorly biodegradable aluminium adjuvant may become insidiously unsafe, especially in cases of repetitive closely-spaced vaccinations and an immature or altered blood brain barrier.**

In this context, the latest research by Lujan et al., which described a severe neurodegenerative syndrome in **commercial sheep linked to the repetitive inoculation of aluminium-containing vaccines, is noteworthy.**

In particular, the “sheep syndrome” is similar to some human diseases also linked to the effect of multiple vaccinations. ^[19] The adverse chronic phase of this syndrome affects 50-70% of flocks and up to 100% of animals within a flock. It is characterized by severe neurobehavioural outcomes (restlessness, generalized weakness, muscle tremors, loss of response to stimuli, ataxia, tetraplegia, stupor, coma and death), inflammatory lesions in the brain and the presence of aluminum in central nervous system tissues. ^[19]

These latter findings thus confirm the ones by Khan et al., ^[7] who demonstrated the ability of aluminium adjuvants to penetrate the blood brain barrier. Furthermore, they illustrate that the resulting presence of aluminium in the brain can trigger severe neurological damage.

By way of explanation, in 2008 a compulsory vaccination against bluetongue virus in sheep was implemented across Europe. In Spain, most sheep were subcutaneously vaccinated against two different viral serotypes. The vaccination protocol called for four doses of vaccines in about a month with an estimated total amount of 16 mg of aluminum per animal. Shortly after (2-6 days), an acute neurological reaction was observed in a low but representative proportion of animals in a large number of vaccinated flocks across the whole country.

This “acute phase” was characterized by an array of sudden onset severe nervous clinical signs such as lethargy, stupor, transient blindness, abnormal behavior and sometimes tremors at limbs and head and seizures in the most severely affected cases. Most animals apparently recovered from this phase.

Between weeks and months later, an insidious and devastating wasting syndrome appeared in vaccinated flocks whether they had been previously affected during the acute phase or not. **This “chronic phase” was characterized by generalized weakness, muscle tremors and weight loss leading to extreme cachexia (weakness and wasting of the body) that could be followed by ataxia (loss of control of body movements), quadraplegia and death.** In certain geographical areas, spontaneous mortality in affected flocks increased a mean of 16.5% (range: 0.8%-65%; 26).

The main lesions (regions in organs or tissues that have suffered damage) were severe meningoencephalitis in the acute phase and muscular atrophy, fat depletion and neurodegeneration in the chronic phase. Intensive investigations in this process were performed by many research groups and all known compatible diseases of ovine were ruled out. Remarkably, the chronic phase of the syndrome had been seen before compulsory vaccination against bluetongue virus by the authors in a small number of flocks.

The sheep syndrome was reproduced in three lambs from a flock that had no previous history of vaccination. Over a period of 10 months, these animals were repetitively inoculated with aluminum-containing vaccines not only against bluetongue virus but also against other important ovine pathogens. **In the whole experiment, the vaccinated lambs received a total amount 56 mg of aluminum divided into 14 inoculations. The clinical picture observed was similar to the chronic phase in both the clinical and pathological aspect. Aluminum was found in a larger amount in nervous tissue of vaccinated animals.** ^[19] The

weight of sheep at time of these inoculations was 45 kg, meaning that each sheep received 1.24 mg of aluminum/kg body weight.

In Western countries, a typical child may be injected with as much as 4.225 mg of elemental Al by the age of 12 months. ^[20] Our review of currently licensed vaccine package inserts in the United States is consistent with this figure. For example, according to the standard U.S. vaccination schedule, every vaccinated child receives a total of 5–6 mg of Al by the age of 2 years, or up to 1.475 mg of Al during a single visit to the pediatrician. ^[21] **Given that vaccine-derived aluminum persists in the body and is absorbed at nearly 100% efficacy, this would mean that a 10 kg weight 12 month old baby would have an aluminum adjuvant burden of 0.4225 mg/kg body weight which is approximately 3x less than the aluminum burden of the sheep reported in Lujan et al.'s study.** ^[21]

This observation should give everyone a pause to think because it shows that the amounts of aluminum which produced the severe neurodegenerative ovine syndrome (which is clearly similar to some human diseases linked to the effect of multiple vaccinations) are in a range that is nearly comparable to human situation. In other words, Lujan's sheep did not receive a "mammoth dose of aluminum" which would be clinically irrelevant.

Similarly to Lujan et al., **Our laboratory conducted detailed behavioural studies on new-born male and female mice given an "equivalent" to high and low exposure to aluminum from vaccines (according to the U.S. and Scandinavian vaccination schedules respectively).** ^[10] The results showed that aluminum injections in the neonatal period significantly increased anxiety-like behaviours and reduced exploratory activities in mice when they were tested as adults approximately 4 months later. **These adverse behavioural outcomes were long-lasting and persisted throughout the two month period of testing.** ^[10]

Our later examinations have shown that mice injected with aluminum in the equivalent to what children in the U.S. receive via vaccinations have altered expression of certain genes in the brain. Namely, **pro-inflammatory genes were up-regulated, while a key neurotransmitter acetyl-cholinesterase (AChE) was down-regulated.** Male mice were more affected. Just as males are more affected with autism. Note that AChE has an anti-depression/anxiety effect. Low AChE activity is associated with deficits in neurodevelopment. ^[22]

Aluminum salts are the most widely used adjuvants in current use. The fact that they can trigger pathological immunological responses and a cascade of adverse health effects is now well documented, albeit still not widely recognized in the medical community.

The administration of continuously escalating doses of this poorly biodegradable adjuvant in the population should be far more carefully evaluated by regulatory agencies and the pharmaceutical industry than what has been the practice to date.

It is likely that individual's tolerance to aluminium may be compromised by a variety of factors including over-vaccination, blood-brain barrier immaturity, individual susceptibility factors (i.e., previous personal or familial history of autoimmune diseases), and aging that may be associated with both subtle blood-brain barrier alterations.

It is also likely that an increasing number of individuals, regardless of their genetic background, will react adversely if exposures to compounds with immune adjuvant properties exceed a certain threshold.

This concept has in fact been clearly demonstrated by Tsumiyama et al. ^[23] who in 2009 showed that **repeated immunization with antigen causes systemic autoimmunity in mice otherwise not prone to spontaneous autoimmune diseases.**

Additional risks

It is true that people are exposed constantly to infectious agents in the environment. However, there is a vast difference between natural exposure and that induced by vaccinations. The reason for this is that the **immune response induced by vaccination is greatly amplified, owing to the addition of adjuvants with immune-stimulating properties.**

This notion is further supported by the fact that **vaccination produces a much higher and sustained level of antibodies compared to natural infection.**

For instance, Gardasil HPV vaccination induces a 40-fold increase in anti-HPV antibodies compared with the physiological antibody level triggered by a natural HPV infection. ^[24] The antibody titre against the HPV-16 and 18 may remain 11 times higher than those induced by a natural infection 5.5 years after vaccination. ^[25] Similarly, Cervarix™ has induced sustained antibody titres for HPV-18 more than 4-fold higher than natural infection titers at 8.4 years after initial vaccination with 100% seropositivity maintained. ^[26]

It should also be noted that vaccinations are carried out almost exclusively for preventative measures and in the absence of an actual infection.

In such a scenario, the vaccine-induced antibodies are more likely to preferentially bind to host antigens with which they share structural similarity. This phenomenon is well known under the term “molecular mimicry” and it has been clearly proven in the case of the antiphospholipid syndrome and the tetanus vaccine. ^[27, 28]

Any government representative, health authority or media representative should become well aware of the risks prior to recommending and/or supporting a one-size-fits-all vaccination program.

Penicillin is not safe for everyone – how can one consider vaccines would be?

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