Autism Spectrum Disorders: A special case of vaccine-induced cow's milk allergy?

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The Institute of Medicine (IOM) report on Adverse Effects of Vaccines Evidence and Causality 2012[1] says:
"Conclusion 4.8: The evidence favors rejection of a causal relationship between MMR vaccine and autism."
and:
"Conclusion 10.6: The evidence is inadequate to accept or reject a causal relationship between diphtheria toxoid, tetanus toxoid, or acellular pertussis–containing vaccine and autism."

The report did NOT study the relationship between any other vaccine and autism.

Cow's milk contains many proteins including casein and folate receptor alpha (FRA) proteins.
Many vaccines use cow's milk derived casein or casamino acids as part of the growth medium for bacterial cultures.[2]Thus these vaccines are contaminated with cow's milk proteins.[3]Daptacel, Pentacel, Prevnar 13, Tenivac, Infanrix, Kinrix, Pediarix, Menomune, Adacel and Boostrix are all contaminated with milk proteins.

Let's compare the sequence of events in cow's milk allergy and autism.

Cow's milk allergy sequence

1. Cow's milk contaminated, aluminum adjuvanted vaccines cause IgE mediated sensitization to, say, casein protein, resulting in milk allergy.[4]

2. If the allergy is mild, milk may be consumed without suffering a reaction.
If the allergy is severe, milk can be introduced as part of an Oral Immunotherapy (OIT) desensitization protocol. In either case, casein specific IgG4 is induced due to prolonged milk exposure.[5,6]

3. Continued dietary and esophagal exposure to milk, results in IgG4 mediated eosinophilic esophagitis (EoE).[7]

4. A milk-free diet, reduces casein specific IgG4, improving EoE.[8]

Autism sequence

1. Cow's milk contaminated, aluminum adjuvanted vaccines cause IgE mediated sensitization to the FRA protein, resulting in FRA allergy.[4]

2. FRA allergy is likely mild because cow's milk contains 1000X more casein[9] than FRA protein[10].
Thus milk may be consumed without suffering a reaction. FRA specific IgG4 is induced due to prolonged milk exposure.[5]

3. FRA specific IgG4 antibodies against bovine FRA, cross-react, bind/block human folate receptors, block folate uptake, resulting in Autism Spectrum Disorders (ASD)[11,12] or Cerebral Folate Deficiency (CFD)[5] disorders. Bovine and human FRA have 90% amino acid sequence homology.[5]

4. A milk-free diet reduces FRA specific IgG4, improving ASD/CFD symptoms.[5]

Ramaekers et al.[5]
"Most of the FR autoantibodies belong to the IgG4 subclass, and the switch to this class of antibodies seems to be influenced by repeated exposure to the antigen over a prolonged period, which supports the conclusion that repeated exposure to milk FR in the digestive tract is the likely mechanism for autoantibody generation."

Injecting milk proteins, causes the immune system to treat them as parasitic antigens. An initial IgE mediated response corresponds to a "low level of infection". With increased milk exposure, we move to high IgG4/IgE ratio phase associated with "high level of infection".

Turner et al.[13]
"Individuals who had detectable levels of IgE but not IgG4 to rABA-1A (11%) had lower average levels of infection compared with individuals who produced anti-rABA-1A IgG4 (40%) and sero-negative individuals (49%) ($P = 0.008$). The ratio of IgG4/IgE in rABA-1A responders positively correlated with intensity of infection ($P < 0.025$)."

Hoyt et al.[14] report that alum-containing vaccines increase total and food allergen-specific IgE, and cow's milk oral desensitization increases Bosd4 IgG4 while peanut avoidance increases Arah2 IgE, highlighting the complexity of today's child with food allergy.

Allergy driven ASD/CFD adds a few more levels of complexity to the findings above.

The FRA associated mechanism described here is not covered by the Taylor et al. study.[15]

Maternal Autoimmunity in ASD

Maternal autoimmunity can contribute to ASD in multiple ways.[16,17]
Cow's milk contaminated vaccines can induce FRA autoantibodies (FRAA) in adults as well.[18]
Since 2013, cow's milk contaminated Tdap is administered to every pregnant woman to protect the newborn against pertussis. Tdap can thus cause the synthesis of FRAA.

Such maternal FRAA bind to folate receptors in the fetal brain, block folate uptake and affect brain development. Similarly, they can also block folate uptake to the fetal thyroid gland and affect thyroid development.[18]

Maternal FRAA in breast milk can continue the damage in the newborn. A vaccine schedule with numerous cow's milk contaminated vaccines can cause the child to begin synthesizing FRAA.

So Mom can synthesize FRAA. The child can synthesize FRAA. Or both. This can explain part of the spectrum in autism spectrum disorders. Maternal FRAA associated ASD may be mistaken as having a genetic origin when in fact vaccines are the still the causal agent.

Action

All contaminating proteins in vaccines must be removed immediately.[19]
All proteins in vaccines needed for disease protection must also be thoroughly scrutinized for molecular mimicry that can result in allergic or autoimmune diseases.

The following preventive measures may help until the vaccines are cleaned up. Pregnant women should be tested for FRAA and IgE to FRA protein. If positive, they should avoid cow's milk to reduce FRAA levels. Folinic acid treatment may be considered for pregnant/lactating women.[20]

Delay administering cow's milk contaminated vaccines to the newborn until cow's milk is introduced in the diet. Thus reducing the risk of synthesizing IgE (and eventually FRAA) to cow's milk proteins.

The author declares that he has no conflict of interest.

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