Have IgE and IgG4 antibodies become vaccine injury biomarkers?

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We know that IgE and IgG4 are involved naturally in helminth defense and now in allergies. IgE dominates in mild helminth infections. IgE mediated histamine release, itching and mucus generation are strategies to physically remove helminths/parasites and prevent major infections. If infection intensifies, an IgE mediated reaction can be dangerous leading to anaphylaxis. So naturally the body downregulates IgE and switches to an IgG4 dominated defense state. A chronic low intensity battle ensues with the helminth to avoid immunopathology of an IgE dominated aggressive defense (1).

We know that any injected protein will result in IgE mediated sensitization to that protein (2,3). Vaccines containing gelatin induce IgE mediated sensitization directed against gelatin (4,5). Egg protein containing vaccines induce IgE mediated sensitization directed against egg proteins (6,7). Toxoid containing vaccines induce IgE mediated sensitization directed against the toxoids (8). Influenza vaccines cause IgE mediated sensitization directed against influenza viral proteins (9–12). Bovine serum albumin (BSA) containing vaccines induce IgE mediated sensitization directed against BSA in humans(13), horses (14) and dogs (15). The Institute of Medicine evaluated the entire research from 1950 to 2011 and concluded that viral/bacterial/food/animal proteins in vaccines do induce IgE mediated sensitization (16).

We know from allergy and helminth infection research that IgE is the first stage of the immune response to an injected antigen. Upon continuing exposure to the antigen, the immune system synthesizes IgG4 directed against the antigen thus resulting in “desensitization” (17–23). Many researchers and allergists including the European Academy of Allergy and Clinical Immunology (EAACI) confuse desensitization with tolerance (24–26). Desensitization is a disease state and corresponds to a chronic parasite infection. There is nothing normal about it. It is useful only because it is better than an IgE dominated defense state that involves anaphylaxis risk.

Vaccines contain numerous proteins including food proteins, fungal proteins, animal proteins and aeroallergens. With the exception of food to some extent, people have no control of exposure to these proteins. Once they develop vaccine-induced IgE mediated sensitization to any of these proteins, unless they suffer a severe allergic reaction, they will continue to be exposed and begin synthesizing IgG4 directed against the antigens. So one can expect IgG4 directed against food, fungal, animal and aeroallergens. Since in developed countries parasite infections are rare, parasite directed IgE/IgG4 are also rare. Therefore in developed countries, IgE/IgG4 are likely to be reliable vaccine injury biomarkers.

IgE/IgG4 directed against food such as milk results in food allergy/eosinophilic esophagitis (27,28).
IgG4 directed against bovine folate receptor alpha proteins (a milk protein) results in autism and cerebral folate deficiency (29,30).
IgE/IgG4 directed against bovine serum albumin (BSA) causes BSA allergy/membranous nephropathy (31,32).
IgG4 directed against bovine insulin (a protein in cow’s milk) causes type 1 diabetes (33,34).

IgG4 directed against vaccine antigens can bind to human self proteins due to molecular mimicry thus resulting in numerous autoimmune disorders (35) and IgG4 related diseases (IgG4-RD).

Immunotherapy for vaccine-induced allergies is another major cause of IgG4 synthesis.

The explosion of IgG4-RD is basically proof of an explosion of vaccine injuries. IgE mediated sensitization caused by vaccines is the first iatrogenic disease of the cascade. IgG4-RD due in part to immunotherapy is the next iatrogenic disease.

Allergists and allergy organizations such as the EAACI discourage people from having IgG4 tests done because they (allergists) don't know how to interpret the results (26). These allergists and allergy organizations use corrupted science (36–39) to deny vaccine injury so they are of course incapable of interpreting the results of IgG4 testing.

References

1. Turner JD, Faulkner H, Kamgno J, Kennedy MW, Behnke J, Boussinesq M, et al. Allergen-specific IgE and IgG4 are markers of resistance and susceptibility in a human intestinal nematode infection. Microbes Infect. 2005;7(7-8):990–6.
2. Arumugham V. Dangerous doctors and anaphylaxis [Internet]. Science. American Association for the Advancement of Science; 2018 [cited 2019 May 6]. p. eaao0666. Available from: https://science.sciencemag.org/content/362/6415/eaao0666/tab-e-letters
3. Arumugham V. How to prevent or reduce risk of food allergies, autism, asthma and type 1 diabetes: From a parent who has been burned [Internet]. 2018. Available from: https://doi.org/10.5281/zenodo.2061370
4. Nakayama T, Aizawa C, Kuno-Sakai H. A clinical analysis of gelatin allergy and determination of its causal relationship to the previous administration of gelatin-containing acellular pertussis vaccine combined with diphtheria and tetanus toxoids. J Allergy Clin Immunol. Elsevier; 1999 Jan 9;103(2):321–5.
5. Kuno-Sakai H, Kimura M. Removal of gelatin from live vaccines and DTaP-an ultimate solution for vaccine-related gelatin allergy. Biologicals. 2003 Dec;31(4):245–9.
6. Yamane N, Uemura H. Serological examination of IgE- and IgG-specific antibodies to egg protein during influenza virus immunization. Epidemiol Infect. Cambridge University Press; 1988 Apr;100(2):291–9.
7. Ratner B, Untracht S, Hertzmark F. Allergy to Viral and Rickettsial Vaccines. N Engl J Med. 1952 Apr 3;246(14):533–6.
8. Markt A, Björkstén B, Granström M. Immunoglobulin E responses to diphtheria and tetanus toxoids after booster with aluminium-adsorbed and fluid DT-vaccines. Vaccine. 1995;13(7):669–73.
9. Davidsson A, Eriksson JC, Rudblad S, Brokstad KA. Influenza Specific Serum IgE is Present in Non-Allergic Subjects. Scand J Immunol. 2005 Dec;62(6):560–1.

10. Nagao M, Fujisawa T, Ihara T, Kino Y. Highly increased levels of IgE antibodies to vaccine components in children with influenza vaccine-associated anaphylaxis. J Allergy Clin Immunol. United States; 2016 Mar;137(3):861–7.

11. Nakayama T, Kumagai T, Nishimura N, Ozaki T, Okafuji T, Suzuki E, et al. Seasonal split influenza vaccine induced IgE sensitization against influenza vaccine. Vaccine. 2015 Nov 9;33(45):6099–105.

12. Smith-Norowitz TA, Wong D, Kusonruksa M, Norowitz KB, Joks R, Durkin HG, et al. Long term persistence of IgE anti-influenza virus antibodies in pediatric and adult serum post vaccination with influenza virus vaccine. Int J Med Sci. Ivyspring International Publisher; 2011 Mar 18;8(3):239–44.

13. de Silva R, Dasanayake WMDK, Wickramasinhe GD, Karunatilake C, Weerasinghe N, Gunasekera P, et al. Sensitization to bovine serum albumin as a possible cause of allergic reactions to vaccines. Vaccine. Netherlands; 2017 Mar;35(11):1494–500.

14. Gershwin LJ, Netherwood KA, Norris MS, Behrens NE, Shao MX. Equine IgE responses to non-viral vaccine components. Vaccine. Netherlands; 2012 Dec;30(52):7615–20.

15. Ohmori K, Masuda K, Maeda S, Kaburagi Y, Kurata K, Ohno K, et al. IgE reactivity to vaccine components in dogs that developed immediate-type allergic reactions after vaccination. Vet Immunol Immunopathol. 2005 Apr;104(3-4):249–56.

16. Stratton K. Adverse Effects of Vaccines: Evidence and Causality. Stratton K, Ford A, Rusch E, Clayton EW, editors. Washington, DC: The National Academies Press; 2012.

17. Hoyt AEW, Schuyler AJ, Heymann PW, Platts-Mills TAE, Commins SP. 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: The Complexity of Today's Child with Food Allergy. J Allergy Clin Immunol. Elsevier; 2017 Jul 7;137(2):AB151.

18. Jones SM, Sicherer SH, Burks AW, Leung DYM, Lindblad RW, Dawson P, et al. Epicutaneous immunotherapy for the treatment of peanut allergy in children and young adults. J Allergy Clin Immunol. United States; 2017 Apr;139(4):1242–52.e9.

19. Akdis CA, Akdis M. Mechanisms of allergen-specific immunotherapy and immune tolerance to allergens. World Allergy Organ J. London: BioMed Central; 2015 May 14;8(1):1–12.

20. Savilahti EM, Rantanen V, Lin JS, Karinen S, Saarinen KM, Goldis M, et al. Early recovery from cow’s milk allergy is associated with decreasing IgE and increasing IgG4 binding to cow's milk epitopes. J Allergy Clin Immunol. 2010;125.

21. Piconi S, Trabattoni D, Rainone V, Borgonovo L, Passerini S, Rizzardini G, et al. Immunological effects of sublingual immunotherapy: clinical efficacy is associated with modulation of programmed cell death ligand 1, IL-10, and IgG4. J Immunol. United States; 2010 Dec;185(12):7723–30.

22. Homburger HA, Mauer K, Sachs MI, O'Connell EJ, Jacob GL, Caron J. Serum IgG4 concentrations and allergen-specific IgG4 antibodies compared in adults and children with asthma and nonallergic subjects. J Allergy Clin Immunol. 1986;77.

23. Ito K, Futamura M, Movérare R, Tanaka A, Kawabe T, Sakamoto T, et al. The usefulness of casein-specific IgE and IgG4 antibodies in cow's milk allergic children. Clin Mol Allergy. 2012;10(1):1.

24. Lavine E. Blood testing for sensitivity, allergy or intolerance to food. CMAJ. Canadian Medical Association; 2012 Apr 3;184(6):666–8.

25. Tomičić S, Norrman G, Fälth-Magnusson K, Jenmalm MC, Devenney I, Böttcher MF. High levels of IgG $_4$ antibodies to foods during infancy are associated with tolerance to corresponding foods later in life. Pediatr Allergy Immunol. 2009 Feb;20(1):35–41.

26. Stapel SO, Asero R, Ballmer-Weber BK, Knol EF, Strobel S, Vieths S, et al. Testing for IgG4 against foods is not recommended as a diagnostic tool: EAACI Task Force Report*. Allergy. 2008 May 16;63(7):793–6.

27. Kagalwalla AF, Amsden K, Shah A, Ritz S, Manuel-Rubio M, Dunne K, et al. Cow's milk elimination: a novel dietary approach to treat eosinophilic esophagitis. J Pediatr Gastroenterol Nutr. 2012;55(6):711–6.

28. Wright BL, Kulis M, Guo R, Orgel KA, Wolf WA, Burks AW, et al. Food-specific IgG(4) is associated with eosinophilic esophagitis. J Allergy Clin Immunol. 2016/04/06 ed. 2016 Oct;138(4):1190–2.e3.

29. Ramaekers VT, Blau N, Sequeira JM, Nassogne M-C, Quadros E V. Folate receptor autoimmunity and cerebral folate deficiency in low-functioning autism with neurological deficits. Neuropediatrics. 2007 Dec;38(6):276–81.

30. Frye RE, Sequeira JM, Quadros E V, James SJ, Rossignol DA. Cerebral folate receptor autoantibodies in autism spectrum disorder. Mol Psychiatry. Nature Publishing Group; 2013 Mar;18(3):369–81.

31. Filippone EJ. Idiopathic membranous nephropathy and IgG4: an interesting relationship. Clin Nephrol. Dustri-Verlag; 2014 Jul;82(1):7–15.

32. Debiec H, Lefeu F, Kemper MJ, Niaudet P, Deschenes G, Remuzzi G, et al. Early-childhood membranous nephropathy due to cationic bovine serum albumin. N Engl J Med. United States; 2011 Jun;364(22):2101–10.

33. Bidet B, Beauvais F, Timsit J, Descours B, Chauveau ME, Benveniste J. Presence of anti-insulin reaginic auto-antibodies of the IgG4 class in insulin-dependent (type I) diabetic patients before insulin therapy. Int Arch Allergy Immunol. Switzerland; 1993;102(2):127–32.

34. Arumugham V. Milk containing vaccines cause milk allergies, EoE, autism and type 1 diabetes [Internet]. The BMJ. 2018. Available from: https://www.bmj.com/content/361/bmj.k2396/rr

35. Ramaekers VT, Sequeira JM, Blau N, Quadros E V. A milk-free diet downregulates folate receptor autoimmunity in cerebral folate deficiency syndrome. Dev Med Child Neurol. 2008;50(5):346–52.

36. Opinion | Transparency Hasn’t Stopped Drug Companies From Corrupting Medical Research - The New York Times [Internet]. [cited 2019 Jan 22]. Available from: https://www.nytimes.com/2018/09/14/opinion/jose-baselga-research-disclosure-bias.html

37. Dickinson J. Deadly medicines and organised crime: How big pharma has corrupted healthcare. Can Fam Physician. College of Family Physicians of Canada; 2014 Apr;60(4):367–8.

38. Ioannidis JPA. Why most published research findings are false. PLoS Med. 2005/08/30 ed. Public Library of Science; 2005 Aug;2(8):e124–e124.

39. Gyles C. Skeptical of medical science reports? Can Vet J = La Rev Vet Can. Canadian Veterinary Medical Association; 2015 Oct;56(10):1011–2.