Vaccinations and their side effects

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Much has been, and still is, reported on complications following vaccinations. Among others, the literature describes the following (rare) Vaccination Induced Side Effects (VISE) of the MMR and polio vaccinations:

- Local erythemas
- Fever
- Irritability
- Tiredness
- General rashes (acute urticaria)
- Conjunctivitis
- Arthropathies
- Peripheral tremor
- Cough and/or coryza
- Post-vaccinal meningitis (aseptic meningitis)
- Guillain-Barré syndrome
- Brachial neuritis
- Anaphylactic shock
- Multiple sklerosis
- Chronic arthritis

Most feared are lasting damages like the consequences of a post-vaccinal meningitis and life threatening diseases like anaphylactic shock. The short lasting smaller side-effects are usually interpreted as the normal reaction of the immune system to the attenuated disease (i.e. the vaccine) and therefore regarded as harmless. Since, according to available statistical data, the "side-effects" of the real diseases are much more frequent than those of the vaccination, the following conclusion is commonly drawn: vaccinations prevent more damage than they cause and are therefore of considerable benefit to society.

Side-effects of vaccinations

Legally, only symptoms which appear within a certain well defined time (normally a few days or weeks) after the vaccination, and thereby suggest a causal link to it, are considered to be side-effects of the vaccination (VISE). Symptoms which develop slowly or only after considerable time are difficult to link to the vaccination because of the multitude of other environmental influences to which the patient is exposed in this period. Since data on these delayed effects are difficult or impossible to treat in a statistically meaningful way, these side-effects are not recognized as caused by the vaccination: up to the year 1991 "only" 1870 patients in Germany filed claims based on VISE according to the BSeuchG [21]. According to Buchwald [31], until 1992 3407 cases of VISE have been legally confirmed in Germany. This corresponds to a prevalence of 4.3 per 100,000 at an incidience of 0.21 per 100,000. For the population of Germany this translates into about 170 confirmed VISE per year. The number of filed claims is of course many times higher.

Gathering data on long term VISE requires very expensive and laborsome observations over long time periods. Those would only be useful, however, if comparable groups of vaccinated and unvaccinated subjects were available for long term study. Many ethical and forensic problems arise at this point. Furthermore, it is difficult to find a sufficient number of unvaccinated people. There are no comparative long term studies on vaccinated and unvaccinated poulations.

An important question in the assessment of how frequently VISE occur has to do with how much attention is given to the observation of VISE and how frequently side-effects are brought in connection with vaccination in general. The editorial of the J. Med. Microbiol. [11] comments: "The rate of post-vaccinal meningitis varies between studies and may be dependent on how hard the investigators try to uncover such cases." This comment was made with respect to a study on the MMR vaccination in the United Kingdom. In this study the authors show that the risk of aseptic meningitis is not, as previously thought, between 0.4 and 10 per million, but rather between 1 and 11 per tenthousand [16]. During mass-vaccinations this leads to a shockingly high number of complications [32], since in this case everybody, without exception, comes into contact with the (attenuated) virus; not just a part of the population as with the naturally ocurring disease.

Between the introduction of the MMR vaccination in the UK in 1988 with the so-called Urabe-Mumps-Strain (sold under the brand names Pluserix and Rimparix in Germany before they were removed from the market in 1992) until the realization of the high risk involved, several years elapsed until this strain was replaced by a different one (Jeryl Lynn) in 1992. It is generally assumed that this strain does not, or not as frequently, lead to aseptic meningits, even though cases of menigitis have already been reported for this particular vaccine [26].

Vaccines

The fact that there even exist different strains of the vaccine has to do with the way they are produced. All vaccines in use today contain live, attenuated viruses (as do measles, polio, rubella, influenza, yellow-fever, varicella).

The "transmutation" (attenuation) of a virulent wild strain into a vaccine is today still an empirical process. The virus is subject to several passages in various cell cultures under non-optimal growth conditions. Through this process the virus changes its specific properties, remains however a "live" virus. The mechanism involved in this attenuation is not known in any detail. Following that, a few safety investigations are made and the reactivity and efficacy is tested on laboratory animals and volunteers.

This process has not changed in essence since the early experiments with vaccines during Pasteur's time. Pasteur, for example, developed a rabies vaccine [52] by cultivating the virus in rabbits and "attenuating" it through variable length exposures to air. It was this method that made Pasteur famous as well as infamous since many people died from rabies caused by the vaccination itself [57].

In the case of cowpox vaccination, which has been abandoned in our latitudes, the origin of the virus contained in the vaccine is not even known. The original vaccine from cowpox used to be transferred from child to child because there was no way of conserving it. Re-cultivation on cows was only successfully accomplished after several decades. In the meantime, attenuation of the vaccine had been achieved in thousands of human bodies -- a very dangerous process indeed, since not only the cowpox virus was transmitted but also all other infectious diseases of the person. "This vaccine is molucular-biologically different from the variola virus as well as the cowpox virus." [58]

Nowadays there are different vaccines, according to manufacturing processes, put on the market by various companies, all with differing properties. However, the molecular basis of the active principle is in most cases still unknown. The natural virus is indistinguishable from the attenuated virus by serological methods. The Urabe mumps virus and the Jeryl mumps virus are identical on that basis. Only through the modern technique of gene sequencing has it recently become possible to identify several differences among the vaccines. It is, however, still unknown why one strain is more reactive than the other. Also unknown is how these genetic differences come about during the process of attenuation. After all, the injection of a live, attenuated virus is a process involving many unknowns and immeasurables, which are taken on faith due to the obvious success and favorable risk/benefit ratio in fighting the so-called mass epidemics.

Reaction of the Immune System

It is important to realize that the reaction of the immune system to the injected vaccine is only known partially: "It has been observed frequently that antibody levels do not go hand in hand with immunity to the disease... The investigation of the second branch of immunity, the cell mitigated immune response, has been technically much more difficult and turned out to be very complex ... There exists now a large number of experimental data and insights into the different mechanisms of the cell mitigated immune response including their interactions among each other and with the humoral immune system. Despite that fact, we have only fragmentary knowledge about the concrete role of the cell mitigated immune response to an infection by isolated pathogenes in the human body." [58, p270].

These statements are very important:

1. The potentially disease-provoking properties of a vaccine are unknown (the structure of the genome is not known).

2. The reaction of the immune system to the injected vaccine is not known in any detail.

3. The interaction of the altered state of the immune system after the vaccination with other variables is unknown.

We don't know which long-term consequences may arise from this, because studies focus predominantly on short-term reactions to the vaccination. There are, however, indications of long-term side-effects of the immunization.

Long-term Consequences

The occurrence of arthralgias has been documented since the first studies about the rubella vaccination [1-10]. Based on these studies the Institute of Medicine states: "The committee concludes that a causal connection exists between the RA 27/3 rubella vaccination strain and incidents of chronic arthritis in women." "Thompson et al. reprorts in 1973 on 11 children with recurrent arthritis which lasted at least for 36 months after vaccination with HPV 77; other cases of potential arthritis have since then reported, some with the RA 27/3 strain." [12].

Arthralgias and arthritic affections occur frequently in connection with diseases for which auto-immune reactions are responsible. Examples are Lupus erythematodes, sclerodermia, Sharp-syndrome, polymyositis [23], or rheumatoid arthritis. It would be advisable to study the connection between activation of the immune system and auto-immune diseases, since the number of diseases in this class is large and grows steadily with our increase in knowledge of their pathophysiology:

Thyreoiditis Hashimoto. Primary myxedema. Pernicious anemia. Auto-immune atrophic gastritis. Morbus Addison. Premature menopause. Goodpasture syndrome. Myasthenia gravis. Sterility in men. Pemphigus vulgaris. Sympathic ophtalmias. Multiple sclerosis. Auto-immune hemolytic anemia. Primary biliary cirrhosis. Uclerative colitis. Sjogren syndrome, etc.

We know that immunizations can lead to a deterioration in existing auto-immune diseases [23]. The symptoms which the body exhibits in these cases because of its specific predisposition, are an indication of a weakness in the regulatory system and are usually overlooked in the "still" healthy person, yet probably present nonetheless (Coulter refers to these cases as "cracked eggs"). "It is generally advisable to abstain from active immunization with live vaccines in the cases of patients with auto-immune diseases or chronic inflammatory processes and vaccinate only in special circumstances and in the presence of strong indications." [23] Further:

"It is not aberrant to assume that immunizations, being a considerable interference with the regulation of the immunulogic network, can influence the progression of vasculitic illnesses." 23]

Even direct side effects are known: "Ten of 1000,000 vaccinated Americans developed auto-immune post-vaccinal encephalitis or peripheral neuritis (Guillain-Barre syndrome) one or two weeks after immunization with attenuated influenca vaccine." [64].

However, it has been difficult to proove that immunizations are actively involved in the emergence of auto-immune diseases, because these illnesses develop after a considerable latency period. Furthermore, studies, in particular if they are supposed to be predictive, are very involved and have not been carried out so far.

Patho-Mechanism

It is the right time to launch these important studies, since a patho-mechanism which might be involved in causing such auto-immune diseases has been known for a long time: the cross-reaction between foreign pathogenes (or vaccines), and body chemistry and tissues, so-called molecular mimicri [59]. One can imagine such a relationship between body tissues and foreign matter on three planes: [58]:

"1. Between two types of cells, tissues, or micro organisms (e.g., bacteria or viruses), if they use a similar or identical kind of molecule in their structure.

2. Between two antigen molecules if , on their surface, they have besides different also identical determinants.

3. Between two determinants, if they are sufficiently similar to react with the same antibody. In this case the group homologue to the antibody will react strongly while the differently configured determinante will yield a weaker reaction."

All these possibilities apply to vaccines or their constituents. If one introduces antigenes into the body (e.g., through vaccination) which have similar structural groups as some body tissue, even if the similarity is only partial, the production of antibodies in the sense of an auto-immune reaction is possible. A well known medical

example for this process is the cross reactivity between poly-sacchardies of the cell membrane of beta-hemolytic streptococci and the human cortical valve during rheumatic fever. In this case, damage to the valve can occur by means of antibody production.

One may remark that the natural infections can trigger auto-immune reactions, too. However, it needs to be pointed out that the vaccination induced infection differs from the natural one in three important ways, and therefore posesses a different antigen makeup from the latter:

1. The pathway of infection is different from the natural disease (i.e., direct confrontation with the antigene by intramuscular injection).

2. The time of infection is determined by the time of vaccination (e.g., all children in the third month), not by the susceptibility of the body or the "random" contact with the virus (readyness of the immune system).

3. The vaccine is an artificial product with additives which modify the action of the pathogen (modified antigen makeup).

For these reasons, vaccination and natural disease are difficult to compare with respect to their risk potential. Both harbor their own risks.

One other point should not be neglected: it is possible to develop tolerance to certein antigenes, the exact opposite of what has been described so far [27]. This principle is exploited by desensitation techniques used therapeutically against hayfever and allergic asthma: the patient is injected with small doses of the allergene (pollen, dust mites, etc.) in order to make them adapt to it.

In a similar manner, the body may develop a tolerance for things which it would normally eliminate due to their harmful nature. Along these lines one could imagine a weakening of the immune response against certain pathogenes, e.g., cancer cells:

"A derailment of the immune system may be responsible for the development of various tumors." [60] "Animal experiments have shown that the fetus, with its imature immune system, can develop a tolerance by exposing it to antigenes." [61] However, the exact time when the immune system has matured fully is unknown, and "other factors like age, genetic background, and nutritional status" [27] are also relevant to the induction of a tolerance. Furthermore, the exact mechanisms leading to a antigene tolerance are still mostly in the dark. Therefore, according to current understanding, there exists a possibility to develop a tolerance for surface antigenes of tumor cells induced by vaccines exhibiting a cross-reaction with tumor antigenes. As a consequence, tumor cells would not be effectively recognized by the immune system and hence also not fully eliminated.

Especially when one thinks about the DTP immunization, which is given in the third month, such reactions seem possible. We don't yet fully understand the highly sensitive interplay between fight and tolerance in our immune system. What consequences our interference from outside bears is impossible to predict. Further study is sorely needed in this area since we know of numerous other mechansims involved in the development of auto-immune diseases (e.g., formation of immune complexes after infection following vaccination [64], etc.).

Purity of Vaccines

Another important issue is the purity of the vaccine. As described above, several vaccines (MMR, polio) are produced by attenuation in living organisms or cell cultures (kidney cell cultures of monkeys). Despite the utmost cleanliness strived for, it is technologically impossible to exclude all possible risks of contamination entirely.

One such risk is, for example, the infestation of the sample by various viruses (slow virus, BSE, retro- viruses, onco-viruses, etc.) or mycoplasms, all of which are difficult or impossible to detect because of their specific properties. "Virus contaminated cell cultures are a significant problem of the bio-industry." [28] In addition, the latency period of diseases caused by these contaminants is suffiently long so that a causal connection is almost impossible to detect.

Live vaccines posess a higher risk of contamination with micro-organisms than other vaccines. Oncogenetic viruses are, for example, present in mammalian cell strains used in vaccine production. [64]

Live vaccines attenuated by conventional procedures are commonly carriers of unknown genetic modifications. Particularly when these modifications are only minor, like localized mutations, the danger of back mutation into a pathogenetic virus is possible. The difference, for example, between the Sabin strain and one of the virulent poliomyelitis strains is only the addition of one nucleotide. The mutation into neuro-virulent strains occurred with rabies vaccines and Sabin-polio strains (oral vaccination) of types 2 and 3 [64]. Another drawback of live vaccines lies in their possibility of complemenataion or recombination with closely related wild strains or vaccine strains. The likelyhood and possible consequences of this are wholly unknown.

Reference [64] poses important thoughts to the issue of vaccination risks.

Because vaccines are applied million-fold on entire populations, overlooked viral contaminations, back mutations, new mutations of the attenuated vaccine, or insufficient attenuation of the pathogene may have dramatic consequences for a large number of people. [30] Big immunizarion accidents happen not infrequently. Here are a few examples taken from the history of medicine: 102 people contracted encephalitis and 17 died 1944 in Brazzaville due to a yellow fever vaccination. A yellow fever vaccination contaminated with hepatitis virus was conducted in the US in 1942. The consequence was 28585 cases of hepatitis and 62 deaths. In 1955, the so-called Cutter incidence: 250 cases of polio and 10 deaths, due to active pathogenes in the vaccine. 1960 in Berlin, within four weeks there were 25 cases of paralytic poliomyelitis reported, after using an insuffieciently attenuated vaccine. [56] Finally, 1988-92 the increase in encephalitis cases after MMR vaccination.

Undesirable reactions to vaccinations are often the consequence of toxic substances in the vaccine, "of contaminants which are not antigenes and have been introduced in the preparation of the vaccine (like, e.g., substances used in cell cultures on which the vaccine virus grows, or insufficiently purified bacteriological antigenes), or in-vivo replications of the viral or bacterial organisms. Hypersensitivity reactions may conceivably be due to additives to the vaccine, like, for example, neomycin in the MMR-vaccine or the mercury contained in Thimerosal, a preservative used in the DTP-vaccine." [25].

Considering that there are more unknowns than knowns in this vast field, with all imaginable cross-reactions, gene transers, etc., it is justifieable to liken the introduction of substances which have been cultivated on living organisms into the human body to a game of lottery. At no time do we know exactly what has been injected nor the consequences arising therefrom.

Development of Allergies

In today's pediatric practice we try hard to delay a possible allergene contact of the baby in order to avoid hyper-allergic reactions later on (e.g. neurodermitis, hayfever, allergic asthma, recently also hyperkinetic syndrome). A study of more than 2000 children showed that feeding them with cow milk during the first 9 months resultet in 7 times more frequent complaints of eczema afterwards [62]. For this reason there are a large number of hypoallergic nutritional products on the market, used by many parents, even though the study could not confirm a connection between ingestion of milk protein and occurrence of eczema.

On the other hand, the children are already at a very early age aggressively exposed to foreign proteins (allergenes) in the form of immunizations: diphteria, tetanus, pertussis, poliomyelitis, hemophilus influenzae, measels, mumps, rubella, and all the corresponding booster shots. Adding to this is the fact that the vaccines (with the exception of polio) come in direct contact with the blood circulation and hence are not subject to a antigen modification by, e.g., the gastro-intestinal tract.

Seeking to avoid contacts with allergenes on one hand, while massively promoting it on the other hand by means of vaccinations seems inconsistent. At least there ought to be studies aimed at investigating the connection between immunizations and subsequent atopias.

The Meaning of Childhood Diseases

What role the so-called childhood diseases play in the development of children has been subject of many discussions. Reports of developmental leaps are frequent, yet usually very subjective. There are, however, some observations that childhood diseases do not just harbor risks but can be quite usueful.

In Annals of Tropical Paediatrics [53] the following case is reported: "1984 a 5 year old girl presented with a bad case of psoriasis. She showed large affected areas on her body and extremities, also involving to a significant degree her scalp. During the following year she was treated by Pediatricians and Dermatologists with coal tar

preparations, local steroids, UV light, and dithranol wraps. Despite these therapies and two hospitalizations, the psoriasis was refractory and remained essentially unchanged until she came down with measles. As the measles rash began to spread over her skin, the psoriasis disappeared. Since then she has been free of psoriasis."

Another startling effect is described in Am. J. Med. Hyg.: "The prevalence of parasites and average density of malaria parasites is significantly lower in children who have had measles or influenza before the age of 9 than in the asymptomatic control group." [54]

An article taken from the Lancet, 1985, [55] may be of decisive importance: "Persons who have never had any visible indication of measles, i.e., never devoloped the skin rash of measles, suffer more frequently from non measles associated diseases." "The data show a highly significant correlation between lack of measles exanthema and auto-immune diseases, seborrhoeic skin diseases, degenerative diseases of the bones and certain tumors... We think that the rash is caused by a cell mitigated immune reaction, which destroys the cells infected with the measles virus. If this is correct, the missing exanthema may indicate that intracellular virus components have escaped neutralization during the acute infection. This may later lead to the aforementioned diseases... The presence of specific antiobdies at the time of infection interferes with the normal immune response against the measles virus, in particular with the development of the specific cell mitigated immunity (and/or cyto-toxic reactions). The intracellular measles virus can then survive the acute infection and cause diseases manifesting in the adult age."

If the infection with measles happens at a time when there are already antibodies against the measles virus present, i.e., within the first few months after birth, or after administration of measles immune serum because of contact with measles, or after antibody production following vaccination, the immune system cannot react fully to the infection, leaving the virus the chance to become persistent.

If vaccinated children contract measles from the wild strain, the possibility exists that the infection will be overlooked in them, since they do not exhibit the typical signs of measles anymore. It is impossible to say how common these latent measles infections are; finding the connection between latent measles and a disease at adult age is impossible. If this suspicion proves to be true, the merit of the measles vaccination has to be re-evaluated carefully.

Level of Protection

A last word to the level of protection: parents who have their children immunized assume that they will not contract the diseases covered by the vaccine. Unfortunately this is not true to the degree that most parents assume. Some examples:

A population in the Gaza strip which was vaccinated to a density of 90% suffered two outbreaks of poliomyelitis, 1974 and 1976. In these epidemics 34% and 50%, respectively, of all sick children had received 3-4 doses of the vaccine. The incidence of diseases was 18 per 100,000 [35].

Hungary had a vaccination program which reached a 93% vaccination density in the target population.

A measles epidemic occurred in 1981. In contrast to earler epidemics, the majority of the sick were vaccinated persons, i.e., about 60%.

During another epidemic between Spetember 1988 and December 1989, there were 17938 cases of measles recorded (attack rate of 169 per 100,000), with the majority of cases reported in the vaccinated population (attack rates for the populations vaccinated in 1971 and 1972 were 1332 and 1632 per 100,000, respectively). The status of immunization was known of 12890 (76%) cases of measles. Of these, 8006 (62%) had been vaccinated. [29]

A measles epidemic broke out in an entirely vaccinated population of about 4200 students of three schools in the USA [38]. Further cases from the U.S. have been reported [46, 47, 48, 49, 50, 51]

Despite a vaccination density of 96%, Fife, Scotland, was afflicted by a measles epidemic in 1991/92. This was followed shorthy thereafter by outbreaks of measles in other parts of the country, notwithstanding the high MMR vaccination density [45].

In Nashville, Tennesse (USA), occurred a large-scale mups outbreak in the vaccinated population [43]. It has been shown that the immunization against mumps provides in many cases only a 75% protection [39, 40, 43]. Mumps is nowadays regarded to be a mild disease [41, 42].

In conclusion we may say the following:

1. Vaccinations modulate the immune system. What exactly happens lies beyond the capabilities of today's scientific analysis. 2. In particular, long-term consequences of vaccinations are unknown because their existence is difficult to prove statistically. 3. So-called minimal lesions [63] and their consequences are not included in statistical studies of vaccination induced side effects. 4. Vaccinations do not give complete protection from the disease.

The decisive question one has to ask is whether the expected short-term benefit of vaccinations outweighs the potential long-term damage. We all tend to concern ourselves only with the problems at hand. Illnesses and diseases which threaten us now are more important in our eyes than possible complaints in the future. The fear of a post-measles encephalitis is bigger than the fear of the rheumatic pain of the 30 or 40 year old adult. If, however, there is indeed a connection between vaccinations and auto-immune diseases or tumor growth, it is questionable whether the cost-benefit analysis of today is still applicable. Considering that homeopathic treatment and prophylaxis can reduce the number of sequelae in childhood diseases significantly, the practice of vaccination becomes even more doubtful.

Knowledge of the nature of chronic diseases as described by Hahnemann are prone to make the homeopathic physician very sceptical towards introducing pathogenes into the human body. (S. Hahnemann, Chronic Diseases, theoretical part)

Confirming Hahnemann's insights, the collective experiences of seasoned homeopathic physicians show that vaccinations pose an obstacle to cure, and that diseases frequently take their course after a vaccination. Furthermore, childhood diseases are usually managed easily, and unvaccinated children undergo a less complicated development as their vaccinated counterparts.

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