OFFICE OF SPECIAL MASTERS

No. 98-122V

(Filed: April 29, 2002)

SHEENA ACKLEY, as Legal Representative of TABITHA ACKLEY, a Minor,	*
Petitioner,	*
v.	*
SECRETARY OF HEALTH AND HUMAN SERVICES,	*
Respondent.	*

D*avid G. Hart, Esq.*, Bedford, Texas, for Petitioner,

R. Lynne Harris, Esq., United States Department of Justice, Washington, D.C., for Respondent.

ENTITLEMENT DECISION

ABELL, Special Master:

I.

The issue in this case is whether Tabitha's MMR vaccine administered on 8 February 1995 caused a Table encephalopathy as that term is statutorily defined or, in the alternative, triggered her hemophagocytic lymphohistiocytosis (HLH). While Petitioner did not succeed in proving her Table claim, this Court finds that she is entitled to compensation under a cause-in-fact theory. The Court's analysis and conclusions follow.[1]

[1]On 14 June 1999, the Court memorialized its bench ruling in an onset hearing conducted in Bedford, Texas. In normal course, this Court then conducted an expert medical hearing on 23 October 2000. Thereafter, the parties were ordered to file closing briefs. This decision is the result of the Court's thorough review of the fact decision, the extant medical records, the testimony and written opinions of the medical experts, and the arguments of the parties.

II.

The Vaccine Act[2] permits two routes of establishing the issue of causation. Petitioners may seek the statutorily prescribed presumption of causation (i.e., a Table injury), or prove injury by a causation-in-fact theory.[3] In this case, Petitioner alleged in her closing brief that Tabitha suffered a "Table injury within Table time" and that "the vaccine was the cause-in-fact of her encephalopathy." *See* Petitioner's Closing Brief at 1.

A. Table Injury

To prevail, Petitioner must demonstrate her Table claim by proving by a preponderance of the evidence that Tabitha sustained an injury or condition set forth in the Vaccine Injury Table. To determine whether one meets Table criteria, reference must be made not only to the text of the statute, but also to the Code of Federal Regulations that changes textual conditions in the table. Considering those relevant provisions in this case, it is undisputed that Petitioner must prove that Tabitha had (1) the "first symptom or manifestation of onset" of an encephalopathy within a 5 to 15 day window following her MMR vaccination;[4] (2) that her encephalopathy is an "acute encephalopathy" (for those under age 18 months of age like Tabitha, that acuteness is "indicated by a significantly decreased level of consciousness lasting for at least 24 hours" that cannot be attributed to a postictal state);[5] and, (3) has "chronic encephalopathy persist[ing] in such person for more than six months beyond the date of vaccination."[6]

Petitioner asserts that the first symptom or manifestation of onset was Tabitha's fever and certain other symptoms transpiring on the 16th of February 1995. (The Court found these facts to exist during the onset hearing. *See* Onset Hearing (Ons. Hrg.) at 82.) Based upon the testimony of Dr. Marcel Kinsbourne, M.D., the Court accepts the onset of certain symptoms as more likely than not the first symptom or manifestation of Tabitha's encephalopathy. *See* Entitlement Hearing (Ent.

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[2] *See* National Childhood Vaccine Injury Act of 1986, 42 U.S.C.A. §§ 300aa-1-- 300aa-34 (West 1991 & Supp. 2001) ("Vaccine Act").

[3] *See* 42 U.S.C. § 300aa-11(c)(1)(C)(i) and (ii)(I). Petitioners must prove the statutory requirements by a preponderance of the evidence. The special master must find the existence of the factual predicates more probable than not. *See In re Winship*, 397 U.S. 358, 372-73 (1970) (Harlan, J., concurring) (quoting F. James, Civil Procedure 250-51 (1965)). Mere conjecture or speculation does not meet the preponderance standard. *Snowbank Enterprises, Inc. v. United States*, 6 Cl. Ct. 476, 486 (1984).

[4] *See* 42 CFR § 100.3. The statute states only that an encephalopathy take place within 15 days. *See* 42 U.S.C.A. § 300aa–14 (a), Initial Table.

[5] See Qualifications and aids to interpretation. 42 U.S.C.A. § 300aa–14 (b) (2) (West 1991 & Supp. 2001).

[6] The parties do not appear to dispute the fact that Tabitha's encephalopathic condition lasted more than six months.

Hrg.) at 85-87. However, the second condition is not so easy. In its onset hearing bench ruling, the Court found that along with Tabitha's fever, she had symptoms of irritability, vomiting, nausea, and appetite loss. Id. at 83. Proffering the mother's testimony, notations in the medical records, and Dr. Kinsbourne's testimony, Petitioner has tried to prove that the "extreme lethargy" present equated to the requisite "decreased consciousness" spanning a period of 24 hours.

Unfortunately, when considering the entire medical record, the Court finds that there is *less* than a preponderance of evidence to prove that Tabitha had the type of decreased consciousness required. She was found to have dehydration along with her fever and the medical records make very clear that although Tabitha was "extremely lethargic" in the hospital, she improved once her fever and dehydration were treated. *See* Petitioner's Exhibit (P's Ex.) 7 at 64-69. That Tabitha responded to treatment by fluids is probative of the fact that in some part, her lethargy was more likely than not due to untreated dehydration and fever. So it is difficult for this Court to accept that her encephalopathy caused her lethargy inasmuch as her dehydration seemed to play an active role. Indeed, both Petitioner's and Respondent's experts acknowledged that an acutely ill, dehydrated, febrile child can appear lethargic. *See* Respondent's Closing Brief at 9 (citing Entitlement Hearing Transcript at 27, 42-42).

The Court is persuaded that Respondent's expert, Dr. Russell Snyder, M.D., was more credible in his assessment that Tabitha's "extreme lethargy," and therefore decreased consciousness, did not constitute the statutory definition of decreased consciousness or span a 24 hour period. Ent. Hrg. Tr. at 36-42. This means, in fine, that while Tabitha was lethargic sufficiently for this Court or the medical experts to opine that encephalopathic conditions were forming or that a low-level encephalopathy existed, the Court simply cannot classify it as meeting the phrase of art "decreased consciousness," spanning 24 hours.[7] It is the Court's opinion that Petitioner's Table encephalopathy claim must fail. Not so, however, with her cause-in-fact claim.

B. Causation-in-fact[8]

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[7] It should be noted that the Court is merely finding that the decreased consciousness, here Tabitha's lethargy, did not extend for a 24 hour period. The Court is not finding that the lethargy was due *solely* to dehydration and fever. This would be speculative and without medical basis. As Petitioner's expert put it, "[W]hen a child comes in with a fever and dehydration, you don't normally get a chief complaint . . . [of] difficulty with lethargy. Obviously, the physicians were impressed by how lethargic this child was. If her lethargy was simply in proportion to fever and dehydration, they would not have been." Ent. Hrg. Tr. at 27.

[8] *See* 42 U.S.C. § 300aa-13(a); *Hines v. Secretary of Dep't of Health and Human Servs*., 940 F.2d 1518,1525. Causation-in-fact requires proof of a logical sequence of cause and effect by traditional tort standards showing that the vaccination was the reason for the injury. *Grant v. Secretary of Dep't of Health and Human Servs*., 956 F.2d 1144, 1148 (Fed. Cir. 1992); *Hines*, 940 F.2d at 1525. A reputable medical or scientific explanation must support this logical sequence of cause and effect. *Grant*, 956 F.2d at 1148; *Strother v. Secretary of Dep't of Health and Human Servs*., 21 Cl. Ct. 365, 370 (1990), aff'd, 950 F.2d 731 (Fed. Cir. 1991). Temporal association of the onset of the injury with the vaccination is not sufficient to establish causation-in-fact. *Grant*, 956 F.2d at 1148; *Strother*, 21 Cl. Ct. at 369. Additionally, showing an absence of an alternative cause of injury does not meet petitioner's affirmative duty to show causation. *Grant*, 956 F.2d at 1149. If petitioner satisfies the preponderance of evidence standard by showing that it is more likely than not that the vaccine actually caused the injury, the burden shifts to

The experts all agreed that Tabitha was diagnosed in January of 1999 with HLH and that disease seemed to have its onset in February of 1995, contemporaneous with her MMR vaccination. Ent. Hrg. at 11, 46, 60-61. They agreed that Tabitha was suffering from a cascading list of physical abnormalities during that time frame. *Id.* Where the experts part company is the identification of the infection or infectious agent (i.e., the cause) which triggered Tabitha's HLH.

As shall be seen, though HLH is very rare, the Court is of the opinion that the onset of this condition is not simply temporal to Tabitha's MMR vaccination. Rather, an examination of the literature in this area and examination of the expert testimony show that a live, albeit attenuated, MMR vaccination can *possibly* trigger HLH. Petitioner's expert testified credibly and married the facts of Tabitha's case to show that her MMR did trigger her HLH.

Despite the fact that this case is difficult because there is not a great deal of medical literature available,[9] Petitioner's case is not a novel theory. Indeed, other special masters have likewise found that HLH or conditions like it can be triggered by a vaccination.[10] At the hearing and upon writing this decision, the Court was more persuaded by Petitioner's expert witness, Dr. Marcel Kinsbourne, M.D., and the points he raised from Respondent's medical literature during the entitlement hearing. Petitioner's explication of the issues was more reasonable and presented adequate justification for Tabitha's injuries. An explanation is therefore in order.

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respondent to prove, by a preponderance of evidence, that a factor unrelated to the administration of the vaccine in question caused the injury. *Grant*, 956 F.2d at 1149-50.

[9] The Supreme Court's observations in *Kumho Tire Co. v. Carmichael*, 119 S.Ct. 1167, 1999 U.S. Lexis 2189 *23-24 (1999) are probative in this type of case for

> *Daubert* makes clear that the factors it mentions do not constitute a definitive checklist or test. . . . Indeed, those factors do not all necessarily apply even in every instance in which the reliability of scientific testimony is challenged. *It might not be surprising in a particular case, for example, that a claim made by a scientific witness has never been the subject of peer review, for the particular application at issue may never previously have interested any scientist.*

(Emphasis added.) Thus, application of *Daubert*'s factors are entirely dependant on the facts and circumstances of the case *sub judice*. In this case, however, the Court is most impressed not with Petitioner's literature but rather that of the Respondent's.

[10] *See Brown v. Secretary of HHS*, No. 99-044v, 2000 WL 1207255 (Fed.Cl. Spec. Mstr. Aug. 3, 2000 (vaccine triggered acute hemolytic anemia though paucity of medical literature existed) *and Gall v. Secretary of HHS*, No. 91-1642v, 1999 WL 1179611 (Fed.Cl. Spec. Mstr. Oct. 31, 1999) (vaccine was triggering agent of familial hemophagocytic lymphohistiocytosis (FHL)); *contra Cohen v. Secretary of HHS*, No. 94-0353V, 1998 WL 408784 (Fed. Cl. Spec. Mstr. July 1, 1998). It should be observed that the instant case deals with the non-genetic form of hemophagocytic lymphohistiocytosis (HLH), the non-genetic form of FHL.

Respondent proffered two experts, Drs. Russell Snyder, M.D.,[11] and Gregory Reaman, M.D.[12] Both were of the opinion that Tabitha's neurological condition was the result of her HLH disease process. Both denied that Tabitha's HLH can be caused by her MMR vaccination. Respondent's experts did not always agree with each other. Under a hypothetical, Dr. Snyder was asked to assume that Tabitha's MMR caused her fever and other symptoms. If true, he conceded that it caused her HLH. Ent. Hrg. Tr. at 52. However, Dr. Reaman would not, by inference, entertain such a proposition. He simply did not know. Ent. Hrg. Tr. at 63. In contrast, Dr. Marcel Kinsbourne, M.D.,[13] agreed with the Respondent's experts to the extent that they diagnosed HLH, yet he opined that Tabitha's HLH was triggered by the MMR vaccination. Ent. Hrg. Tr. at 11-17. To comprehend that nature of this argument, a review of the facts is helpful.

Tabitha was apparently a healthy child who had normal childhood illnesses. The experts agree that her HLH did not manifest itself in the records prior to February 1995. It was on 8 February 1995 that 13 month old Tabitha had her MMR vaccination. About one week later or as the Court found, on 16 February 1995, Tabitha had a fever, was nauseated, congested, lost her appetite, and became irritable. *See* P's Ex. 42 and Onset Hrg. at 82. Her mother averred during the onset hearing that around the time frame of 21 February 1995, Tabitha was vomiting and had nausea, that she was congested, lethargic, and becoming unresponsive. In her words, "[a]fter a few more days went by, she became irresponsive [sic]. She wouldn't get up and play or any – or even walk around or anything; she would just lay there." Onset Hrg. Tr. at 15. Tabitha's mother said that these concerns prompted her to take Tabitha to the treating physician on 22 February 1995. *Id.* at 16. Because that doctor's office was closed, her mother waited until the next day, the 23rd of February. On that morning before meeting the doctor, Tabitha's mother observed that Tabitha was "just laying there.

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[11] Dr. Snyder received a B.A. from Swarthmore College in 1954 and an M.D. from The University of Pennsylvania School of Medicine in 1958. He served a pediatric residency at University of Colorado Medical Center from 1959-60. He is board certified in pediatrics and neurology with special competence in child neurology. He is currently a professor of neurology and pediatrics at the University of New Mexico Medical Center. He is licensed in Pennsylvania, Colorado and New Mexico. To his credit, he has written over 123 articles, reviews, books, and book chapters.

[12] Dr. Reaman received his doctorate from Loyola University of Chicago in 1973. Among his impressive credentials, Dr. Reaman is a diplomate on the National Board of Medical Examiners, is certified in Pediatrics with a sub-specialty board of Hematology / Oncology, and is licensed to practice in the State of Maryland and District of Columbia. At present, he is the director of the Medical Specialty Services at Children's National Medical Center in Washington, D.C. He has received numerous awards and honors. To his credit, he has either authored or co-authored 116 articles for journals, book chapters, and other medical publications.

[13] Dr. Kinsbourne received his B.A. (1952), B.M. (1955), M.A. (1956) and D.M. (1963) from Oxford University. He is licensed in the United Kingdom, Canada, the State of North Carolina, and the Commonwealth of Massachusetts. He currently serves, *inter alia*, as Research Professor at the Center for Cognitive Studies at Tufts University and Consulting Neurologist at the Boston Veterans Administration Medical Center. He serves on the editorial boards of *Archives of Clinical Neuropsychology* and *Developmental Neuropsychology*. Currently, he is a member of the American Neurological Association, Child Neurology Society, International Neuropsychological Society, Society for Neuroscience, and Society for Pediatric Research. In his fields, he has authored or co-authored over three hundred professional publications. Myoclonic encephalopathy of childhood is also known as "Kinsbourne Syndrome," named for Dr. Kinsbourne. DORLAND'S ILLUSTRATED MEDICAL DICTIONARY 551 (27th ed. 1988).

She – her eyes would roll, and she was very unresponsive to anybody. She wouldn't respond to me or my other children." *Id.* at 16-17. While at the doctor's office, the treating pediatrician expressed concern about Tabitha's condition and she was immediately taken to the emergency room. *See* P's Ex. 7 at 11 and Onset Hrg. at 16. Upon arrival at the emergency room, Tabitha was noted to have a fever of 104.7° and noted to be "extremely" lethargic. Part of her lethargy appeared to resolve with treatment. P's Ex. 42. The clinical diagnosis of her condition shifted but what is certain is that her acute encephalopathy resolved somewhat during her hospital stay but the presence of a chronic encephalopathy persisted. While at the hospital, Tabitha was tested for a viral or bacterial process at work. Those cultures were negative. Along with Dr. Kinsbourne, the Court believes the mother that Tabitha had a lowered level of consciousness for five to six days while in the hospital. Ent. Hrg. Tr. at 9 and P's Ex. 42. In a word, Tabitha was not herself.

Dr. Snyder argued that this symptomology was not due to the MMR vaccine but rather pointed to an unknown preceding illness, a "cough and the fever" manifested in "her upper respiratory tract. And her GI tract because there was vomiting." Tr. at 49. The thrust of his testimony was that this precedent infection was not due to Tabitha's MMR vaccination but rather the onset of her HLH. This could be explained, he opined, because Tabitha had been tested and found to have abnormal liver enzymes during the February 1995 hospitalization. Tr. at 46. He could not opine whether HLH had to be initiated by infection but deferred this point to Dr. Reaman. Ent. Hrg. Tr. at 51-52. As observed earlier, Dr. Snyder conceded in a hypothetical that if the MMR vaccine caused Tabitha's fever and attendant symptoms, Tabitha's MMR vaccine would have caused or was a cause of her HLH. *Id.* Petitioner's Dr. Kinsbourne did not hesitate to aver that Tabitha's MMR vaccination caused her symptomology and, therefore, triggered her HLH. For this, he depended upon the setting detailed in Dr. Reaman's report: "HLH is likely due to an infectious agent, presumably viral, . . . an infectious agent is the trigger that sets off the chain of reactions. And in my review of the record and testimony, the only viral infectious agent I was able to find documented was in fact, the live attenuated measles vaccine virus." *Id.* at 14-15. He did not say that the MMR caused Tabitha to have full blown measles. The Court does not believe that Tabitha's symptoms were merely "incidental" as Dr. Snyder opined *because* of the close temporal relation to the vaccination *and* the symptoms that followed during the relevant window after vaccination. This conclusion became more probable given the remainder of Dr. Kinsbourne's and Dr. Reaman's testimony.

Dr. Reaman described the condition of HLH as one that was either genetic or viral. *Id.* at 58-60. He was unclear as to whether Tabitha had a genetic or viral type though he was certain that her February 1995 symptoms of fever, enlarged liver, transient mental status, and progressive neurologic deterioration were consistent with the criteria for HLH. Ent. Hrg. Tr. at 66-67. Dr. Reaman then opined that he was unsure of what the cause of HLH was and did not know of any studies or documentation proving that an immunization can be a cause of HLH. *Id.* at 70. He held that "even with a very extensive workup it is frequently impossible to pinpoint or define what the causative, for lack of a better word, agent is." Ent. Hrg. Tr. at 71. What troubled the Court was that he opined that

any relation between Tabitha's MMR and HLH was "purely coincidental." *Id.* How to reconcile?[14] Moreover, on cross examination, Dr. Reaman was presented with Respondent's Exhibit H where he conceded that the trigger for HLH is "frequently a virus" but that "frequently the triggering event is not actually known." *Id.* at 73. Poignantly, he agreed with the literature that the triggers for HLH "have expanded beyond viruses to include virtually any infectious agent." *Id.* at 79.

Yet, as Dr. Kinsbourne put it, there was "only one virus that we know without speculation was in this child's body at that time, or at least onset of viruses – the viruses that constitute the MMR vaccine." Ent. Hrg. Tr. at 87. He continued,

> So I would like to present my emphasis that there is general agreement that in many cases, if not all, HLH is triggered by an infection. That viruses feature prominently among those triggers. That a wide variety of viruses can be involved in different cases. And that here we have viruses that we know for sure were in fact in this child's body at the time.

Id. Dr. Kinsbourne had already supported this conclusion earlier in his testimony. He opined that Tabitha's MMR caused her constellation of symptoms that triggered her HLH. Ent. Hrg. Tr. at 12-15.

While Dr. Reaman found it "extremely unlikely" that an attenuated virus, an organism that "does not even cause measles" could trigger a potentially morbid condition such as HLH, the Court was not persuaded. The medical literature submitted by Respondent stated proof of an HLH trigger by referencing an "infectious agent." *See* Respondent's Exhibit (R's Ex.) H at 439. Dr. Reaman failed to explain why a measles vaccine with an attenuated virus was not an infectious agent or why it could not lead to some type of infection or autoimmune reaction. He may not have been able to do this. Nevertheless, the Court is persuaded by Dr. Kinsbourne's testimony because it linked the vaccination with known effects and the theory of an attenuated virus in the MMR vaccine as a trigger to HLH. It was, in short, a logical and sequential explanation of cause and effect. Respondent's experts also offered a logical and sequential explanation but the Court found those explanations to be lacking in persuasiveness. In other words, Dr. Kinsbourne's explanation sounded more credible and reasonable.

Respondent's medical literature makes clear that HLH is, as Dr. Reaman noted, possibly a "familial genetic disorder" or a "sporadic isolated syndrome occurring in infancy or childhood, in association with a systemic infection that may be viral, bacterial, fungal, or parasitic; or in individuals with an underlying malignancy or immunodeficiency disorder." *See* R's Ex. I (Nathan and Oski, *Hematology of Infancy and Childhood* 1362 (1998)). The familial genetic type has its onset at an early age, within the first three months of life and the distinguishing feature is the *familial pattern of disease*, indicating . . . inheritance." *Id.* In the instant case of 13 month old Tabitha, there

[14] The Court notes that another special master was troubled by this same logic posited by Dr. Reaman in a similar case. *See Brown v. Secretary of HHS*, 2000 WL 1207255 (Fed.Cl. Spec. Mstr. Aug. 3, 2000).

was no documentation of familial disease. The section on infection-associated HLH was more probative. The article observed that a causative mechanism could be a virus and "included virtually any infectious agent, . . ." *Id.* Table 36-3 in this article listed "*some* of the infections" associated with hemophagocytic syndromes and characterized the general syndrome as manifesting fever, constitutional problems, and liver enzyme abnormality. *Id* (emphasis added). This was true for both the genetic type of HLH and the infection-associated HLH. Probative in the Court's mind, however, is that "*many* infectious agents associated with HLH *are potent stimulators of the immune system* and require complex interactions of immunoregulatory cells for host recovery." R's Ex. I (Nathan and Oski, *Hematology of Infancy and Childhood* 1365 (emphasis added)).

Another of Respondent's articles discussed the "triggering organisms" of hemophagocytic syndromes. R's Ex. H. Among these was the measles virus. *Id.*[15] Dr. Reaman testified that a triggering organism was something that is "in some way causative of the illness." Ent. Hrg. Tr. at 73. Probative in this article was the discussion that the triggering organisms play a factor and that infections "probably are anyway the triggering mechanisms for most of the manifestations of primary HLH . . . ." R's Ex. H at 439.

III.

The Court is convinced by a preponderance that Tabitha's MMR vaccine triggered her HLH. Based upon the entirety of the medical records and the testimony of the experts, the Court finds that Petitioner is entitled to compensation. All statutory prima facie requisites have been met. The next phase in this case is the issue of damages. A damages order will follow this decision.

IT IS SO ORDERED.

[15] While taking into account Dr. Reaman's confusing testimony here that HLH is not exactly the same, or "identical" to infection-associated hemophagocytic syndrome, the Court is still persuaded that this article references primary and secondary HLH as similar and indeed lumped together with hemphagocytic syndromes which have among their suspected causal elements, triggering organisms, like the measles virus though without the disease itself. *See* R's Ex. H (Janka, Imashuku, et al., *Infection and Malignancy-Associated Hemophagocytic Syndromes*, 12 Hematology / Oncology Clinics 437 (1998)); *see also,* Ent. Hrg. Tr. at 59-60, 75 (Dr. Reaman stated that "Hemophagocytic lymphohistiocytosis [HLH] is a hemphagocytic syndrome. It is sometimes associated with infection, but I do not think it should be construed as being identical to infection-associated hemophagocytic syndrome." *Id.*) The article seems to include HLH among the class of infection-associated hemphagocytic syndromes.

The authors opined that there "is no way to differentiate the secondary infection-associated hemophagocytic syndrome reliably from the primary genetic form of [HLH]" So Dr. Reaman's idea that HLH is "thought to be primary or secondary [i.e., genetic or viral / infection]" is confusing. How he differentiates Tabitha's case from infection-associated hemophagocytic syndrome at all is unclear.

Richard B. Abell
Special Master