

United States Court of Federal Claims

No. 07-137 V
(Filed with parties: August 4, 2009)
(Reissued: August 18, 2009)
TO BE PUBLISHED

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| PETER BROEKELSCHEN, M.D., |) | |
| |) | Review of special master's |
| Petitioner, |) | decision denying compensation; |
| |) | National Vaccine Injury Act, 42 |
| v. |) | U.S.C. § 300 aa-1 <i>et seq.</i> ; off- |
| |) | Table case; causation; burden of |
| SECRETARY OF HEALTH AND HUMAN |) | proof; scope of judicial review |
| SERVICES, |) | |
| |) | |
| Respondent. |) | |

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OPINION AND ORDER¹

GEORGE W. MILLER, Judge

Petitioner, Dr. Peter Broekelschen, seeks review of a decision by Special Master Christian J. Moran dated February 4, 2009, denying compensation under the National Vaccine Injury Compensation Program, 42 U.S.C. §§ 300aa-1 to -34 (“Vaccine Act”). Dr. Broekelschen alleges he was injured by an influenza vaccine he received on October 28, 2005. He filed for compensation on March 1, 2007. The special master denied relief on the ground that Dr. Broekelschen failed to prove by a preponderance of the evidence that the vaccination had caused his injury. *Broekelschen v. Sec’y of Health & Human Servs.*, No. 07-137V, 2009 WL 440624 (Fed. Cl. Spec. Mstr., Feb. 4, 2009), at *1 (“Dec.”).

¹ Pursuant to Rule 18(b), Appendix B of the Rules of the Court of Federal Claims (“RCFC”), this opinion and order is initially being filed under seal. By rule, the parties are afforded fourteen days in which to propose redactions.

Petitioner timely filed a motion for review under § 300aa-12(e) of the Vaccine Act, claiming that the special master's decision was not supported by the record and thus was arbitrary and capricious. Petitioner's Motion for Review (docket entry 68, March 5, 2009) ("Pet."). In the alternative, petitioner claims that the special master's decision imposed an improper standard of causation. *Id.* at 2. Petitioner asserts that the special master's decision should be reversed or remanded to the special master for further consideration. *Id.* at 50. Respondent argues that the special master applied the correct standard of causation and the decision is properly supported by the record. Respondent's Memorandum in Response to Petitioner's Motion for Review (docket entry 73, April 3, 2009) ("Resp.").

BACKGROUND

Dr. Broekelschen was born on June 18, 1942 and is now a physician specializing in internal medicine and gastroenterology. *Pet.* at 3. On October 28, 2005, Dr. Broekelschen received a dose of the flu vaccine from his primary physician, Dr. John Storch. *Dec.* at 2. The parties apparently agree that any health issues Dr. Broekelschen experienced prior to the date of his flu vaccine are not relevant to the injury at issue in this case. *Id.*

On December 16, 2005, Dr. Broekelschen was admitted to Hoag Memorial Hospital Presbyterian with sudden severe chest pain along with pain in his arms, fingers, neck, and left scapula. *Id.* Dr. Broekelschen remained in the hospital for almost two weeks, until December 29, 2005. *Id.* During his hospitalization, doctors administered tests in an attempt to diagnose Dr. Broekelschen's condition. *Id.* at 9-11. However, the treating physicians never formed a consensus on what was causing his injury. In fact, various doctors expressed multiple possible causes, including transverse myelitis and anterior spinal artery syndrome. *Id.* at 13. Both conditions are spinal cord injuries that are difficult to diagnose and produce many of the same symptoms. *Id.* at 6-8. Transverse myelitis is a rare condition caused by inflammation in the spinal cord. *Id.* at 8. Anterior spinal artery syndrome is caused by a blocked blood vessel at the rear of the spinal cord resulting in reduced blood flow. *Id.* Blood vessel problems are also referred to as "vascular" problems or "ischemia." *Id.* Damage to the spinal cord is also called "myelopathy." *Id.* Both transverse myelitis and anterior spinal artery syndrome are included in the term myelopathy. *Id.* Unfortunately, as the parties agree, doctors are often imprecise when referring to the spinal conditions at issue, even in written reports, and often use the term transverse myelitis when they are referring generally to a spinal cord injury, instead of using the more general term, myelopathy. *Id.* at 7. This makes the interpretation of hospital records difficult. While in the hospital, petitioner was treated for both conditions. *Id.* at 16-17. None of the treating physicians testified at the hearing on this matter.

One distinguishing factor between transverse myelitis and anterior spinal artery syndrome is a condition called proprioception. *Id.* at 12. Proprioception refers to a person's own sense of the relative position and movement of his body parts. *Id.* If a patient's proprioception is intact, the patient is more likely to suffer from anterior spinal artery syndrome. *Id.* On the other hand, a

deficiency in proprioception makes the diagnosis of transverse myelitis more likely. There is conflicting evidence in the record about the state of petitioner's proprioception. Several notations in petitioner's medical records from his hospitalization note that petitioner's proprioception was intact. *Id.* However, at the hearing petitioner testified that during his hospitalization he was told by treating neurologists that his proprioception was abnormal. *Id.* Other medical records, including the post-hospital discharge, contain notes that indicate impaired proprioception. *Id.*

Although Dr. Broekelschen's condition had improved when he was discharged from the hospital, he had not fully recovered by the time of the special master's decision. *Id.* at 3. Dr. Broekelschen filed his petition with this court on March 1, 2007. Petitioner also filed a report alleging that the flu vaccine caused him to suffer transverse myelitis. His report included medical records from his hospitalization as well as a report from a doctor he retained, Dr. Lawrence Steinman. Respondent denied that the flu vaccine caused Dr. Broekelschen to suffer transverse myelitis. Respondent also presented a report from a retained doctor, Dr. Benjamin Greenberg. Both parties filed supplemental reports from their experts along with the medical articles on which their experts relied. A hearing was held on February 12-14, 2008, with three testifying witnesses, Dr. Broekelschen, Dr. Steinman, and Dr. Greenberg. After the hearing, the special master issued an order proposing a process for choosing an independent neuroradiologist to review petitioner's MRI results and submit a report "explaining whether petitioner suffers from transverse myelitis or anterior spinal artery syndrome" (docket entry 63, Nov. 21, 2008). Petitioner filed a status report opposing the special master's proposal (docket entry 64, Nov. 24, 2008) and no independent neuroradiologist reviewed the record.

On December 17, 2008, the special master filed an opinion granting petitioner an award of attorneys' fees and costs and finding that Dr. Broekelschen possessed a reasonable basis and acted in good faith in claiming that the flu vaccine caused him to suffer transverse myelitis. *Broekelschen v. Sec'y of Health & Human Servs.*, No. 07-137V, 2008 WL 5456319 (Fed. Cl. Spec. Mstr., Dec. 17, 2008). On February 4, 2009, the special master issued his decision denying entitlement. Petitioner timely moved for review of that decision on March 5, 2009.

DISCUSSION

The evidence in this case is in conflict concerning the proper diagnosis of petitioner's injury. Since petitioner's medical records have conflicting opinions on the diagnosis, both parties brought in experts to interpret the records. Petitioner's expert, Dr. Lawrence Steinman, testified that the diagnosis should be transverse myelitis caused by the flu vaccine. Defendant's expert, Dr. Benjamin Greenberg, testified that the diagnosis should be anterior spinal artery syndrome caused by a vascular event. The two parties do agree, however, that petitioner suffered a spinal injury about six weeks after receiving the flu vaccine.

The special master spent the majority of his opinion carefully reviewing the evidence to determine which diagnosis is best supported by the record. He divided the evidence into four categories: tests; clinical symptoms, including proprioception; opinions of treating doctors; and

opinions of testifying experts. The special master carefully evaluated each category of evidence. Dec. at 8-16. Regarding these four categories, the special master found that “two strong pieces of evidence support the finding that Dr. Broekelschen suffered anterior spinal artery syndrome.” *Id.* at 19. These were the results of an angiogram and the “preponderance of the evidence indicat[ing] that Dr. Broekelschen’s proprioception while hospitalized was normal.” *Id.* at 17-18. The special master found that “the reports of all doctors who treated Dr. Broekelschen both inside and outside of the hospital provide relatively little valuable information in determining which condition affected Dr. Broekelschen” and therefore “the testimony of the experts retained for litigation has increased relevance.” *Id.* at 21. The special master noted that while both experts had impressive credentials, he found that defendant’s expert, Dr. Greenberg, was more persuasive than petitioner’s expert, Dr. Steinman. *Id.* at 16.

In particular, the special master devoted extensive discussion to an analysis of the experts’ testimony relating to the various test results and the significance of those results in determining petitioner’s diagnosis. *Id.* at 22-24. While the special master considered Dr. Steinman’s hypothesis that “the presence of two lesions on the MRIs must mean transverse myelitis,” the special master did not find this theory persuasive because Dr. Steinman did not propose a way to reconcile “one of the most valuable pieces of evidence,” the angiogram, with a diagnosis of transverse myelitis. Nor did Dr. Steinman show that the angiogram was irrelevant to the diagnosis. Instead, the special master found that Dr. Greenberg’s theory that petitioner suffered a vascular event leading to anterior spinal artery syndrome took into account all the evidence, including the MRIs, and was therefore entitled to greater weight. *Id.* at 22-24.

After thoroughly analyzing the entire record, the special master found that “the stronger evidence indicates that Dr. Broekelschen suffered anterior spinal artery syndrome and the weaker evidence indicates that Dr. Broekelschen suffered transverse myelitis.” *Id.* at 22. Thus, the special master determined that the preponderance of the evidence supported a diagnosis of anterior spinal artery syndrome and not transverse myelitis. *Id.*

Once the special master decided that Dr. Broekelschen did not suffer from transverse myelitis, he then looked at the evidence, applying the *Althen* test, to decide whether petitioner met his burden of showing that his anterior spinal artery syndrome was caused by the flu vaccine he received. *Id.* at 24-28. The special master found that “[t]he quality and amount of the evidence supporting the theory that the flu vaccine caused Dr. Broekelschen to suffer anterior spinal artery syndrome were weak and relatively sparse.” *Id.* at 21. Therefore, the special master denied compensation, finding that petitioner had failed to satisfy the first prong of the *Althen* test because petitioner did not present “a reliable medical theory connecting the flu vaccine to his anterior spinal artery syndrome.” *Id.*

I. Legal Standards Applied in Vaccine Act Cases

A petitioner under the Vaccine Act must prove either: (1) that he suffered an injury described on the Vaccine Injury Table,² or (2) that he suffered an injury that was actually caused by a vaccine. *See* 42 U.S.C. §§ 300aa-13(a)(1)(A), 300aa-11(c)(1); *Capizzano v. Sec’y of Health & Human Servs.*, 440 F.3d 1317, 1320 (Fed. Cir. 2006). This case involves only the latter, an “off-Table” injury.

Eligibility for compensation is established in an “off-Table” case when the petitioner demonstrates by a preponderance of the evidence that: (1) petitioner received a vaccine set forth on the Vaccine Injury Table; (2) he received the vaccine in the United States; (3) he sustained or had significantly aggravated an illness, disease, disability, or condition caused by the vaccine; and (4) the problem has persisted for more than six months. *See* 42 U.S.C. §§ 300aa-13(a)(1)(A) and 300aa-11(c)(1). In this case, the only dispute is whether petitioner’s flu vaccine caused his injuries.

In an “off-Table” case, a petitioner must establish a prima facie case of actual causation. A petitioner can satisfy this burden by showing, “by preponderant evidence that the vaccination brought about [the] injury by providing: (1) a medical theory causally connecting the vaccination and [the] injury; (2) a logical sequence of cause and effect showing that the vaccination was the reason for [the] injury; and (3) a showing of a proximate temporal relationship between vaccination and injury.” *Althen v. Sec’y of Health & Human Servs.*, 418 F.3d 1274, 1278 (Fed. Cir. 2005); *see also Hines v. Sec’y of Health & Human Servs.*, 940 F.2d 1518, 1525 (Fed. Cir. 1991). Circumstantial evidence and medical opinions may be sufficient to satisfy the second *Althen* factor. *Capizzano*, 440 F.3d at 1325. To prove his claim by a preponderance of the evidence, petitioner must show that it is “more probable than not” that the vaccine caused petitioner’s injury. *Althen*, 418 F.3d at 1279.

Petitioner need not show identification and proof of specific biological mechanisms, since “the purpose of the Vaccine Act’s preponderance standard is to allow the finding of causation in a field bereft of complete and direct proof of how vaccines affect the human body.” *Id.* at 1280. Nor must petitioner show that the vaccination was the sole cause or even the predominant cause of the injury or condition; showing that the vaccination was a “substantial factor” in causing the condition and was a “but for” cause is sufficient for recovery. *Shyface v. Sec’y of Health & Human Servs.*, 165 F.3d 1344, 1352 (Fed. Cir. 1999); *see also Pafford v. Sec’y of Health & Human Servs.*, 451 F.3d 1352, 1355 (Fed. Cir. 2006) (stating that petitioner must establish that vaccinations were a substantial factor and that harm would not have occurred in the absence of vaccination). Petitioner may not be required to show “epidemiologic studies, rechallenge, the

² In accord with the Vaccine Act, the Secretary of Health and Human Services maintains a Vaccine Injury Table by regulation. *See* 42 C.F.R. § 100.3 (2008), as adopted and revised pursuant to the authority of 42 U.S.C. § 300aa-14(c).

presence of pathologic markers or genetic disposition, or general acceptance in the scientific or medical communities to establish a logical sequence of cause and effect.” *Capizzano*, 440 F.3d at 1325. However, the petitioner must provide a “reputable medical or scientific explanation” for his claim. *Althen*, 418 F.3d at 1278. The determination of whether a proffered theory of causation is “reputable” may “involve an assessment of the relevant scientific data.” *Andreu v. Sec’y of Health & Human Servs.*, 539 F.3d 1367, 1380 (Fed. Cir. 2009).

If petitioner establishes a prima facie case of entitlement to compensation, the burden shifts to respondent to show, also by a preponderance of the evidence, that the injury was in fact caused by factors unrelated to the administration of the vaccine. *Walther v. Sec’y of Health & Human Servs.*, 485 F.3d 1146, 1151 (Fed. Cir. 2007). A prima facie case requires adequate evidence of each of the three factors of the actual causation test. *Althen*, 418 F.3d at 1278. The special master, therefore, must decide whether the petitioner has met this burden by evaluating the entire record. *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 592-95 (1993) provides a useful framework for evaluating scientific evidence in Vaccine Act cases. *Terran v. Sec’y of Health & Human Servs.*, 41 Fed. Cl. 330, 336 (1998), *aff’d*, 195 F.3d 1302, 1316 (Fed. Cir. 1999), *cert. denied*, *Terran v. Shalala*, 531 U.S. 812 (2000). The *Daubert* factors for analyzing the reliability of expert testimony are:

- (1) whether a theory or technique can be (and has been) tested;
- (2) whether the theory or technique has been subjected to peer review and publication;
- (3) whether there is a known or potential rate of error and whether there are standards for controlling the error; and
- (4) whether the theory or technique enjoys general acceptance within a relevant scientific community.

Daubert, 509 U.S. at 592-95.

However, when using the *Daubert* factors to evaluate evidence under the Vaccine Act, the relevant scientific evidence must be viewed “not through the lens of the laboratorian, but instead from the vantage point of the Vaccine Act’s preponderant evidence standard.” *Andreu*, 569 F.3d at 1379. In other words, a finding of causation in the medical community may require a much higher level of certainty than that required by the Vaccine Act to establish a prima facie case. The special master must take these differences into account when reviewing the scientific evidence. *See id.* at 1379-80.

II. Standard of Review

Jurisdiction lies in this Court pursuant to 42 U.S.C. § 300aa-12(e). In reviewing a decision of the special master, this Court may (1) uphold the findings of fact and conclusions of law, (2) set aside any of the special master’s findings of fact or conclusions of law “found to be arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law,” or (3) “remand the petition to the Special Master for further action in accordance with the court’s direction.” 42 U.S.C. § 300aa-12(e)(2)(A)-(C); *Althen*, 418 F.3d at 1277-78; *Saunders v. Sec’y of Health & Human Servs.*, 25 F.3d 1031, 1033 (Fed. Cir. 1994). Findings of fact of the special

master are reviewed under the arbitrary and capricious standard, conclusions of law are reviewed under the “not in accordance with law” standard, and discretionary rulings are reviewed under the abuse of discretion standard. *Saunders*, 25 F.3d at 1033; *Munn v. Sec’y of Health & Human Servs.*, 970 F.2d 863, 870 & n.10 (Fed. Cir. 1992) (noting that the arbitrary and capricious standard is “well understood to be the most deferential possible”). It is particularly difficult for a petitioner to satisfy the arbitrary and capricious standard of review “with respect to an issue that turns on the weighing of evidence by the trier of fact.” *Lampe v. Sec’y of Health & Human Servs.*, 219 F.3d 1357, 1360 (Fed. Cir. 2000). “In general, reversible error is ‘extremely difficult to demonstrate’ if the special master ‘has considered the relevant evidence of record, drawn plausible inferences and articulated a rational basis for the decision.’” *Id.* (quoting *Hines*, 940 F.2d at 1528). As the Federal Circuit stated in *Munn*, 970 F.2d at 871:

[I]t is not . . . the role of [of the reviewing court] to reweigh the factual evidence, or to assess whether the special master correctly evaluated the evidence. And of course we do not examine the probative value of the evidence or the credibility of the witnesses. These are all matters within the purview of the fact finder.

III. The Special Master’s Decision Was Not Arbitrary, Capricious, or Legally Erroneous and Should Be Affirmed

Petitioner challenges the special master’s decision in several respects, but the basic theme of his appeal is that the special master erred in concluding that petitioner failed to prove that the flu vaccination caused petitioner’s spinal injury.

A. It Was Appropriate For the Special Master to First Determine Petitioner’s Diagnosis and Then to Analyze the Evidence on Causation Under the *Althen* Test

In his decision, the special master first determined whether petitioner suffered from transverse myelitis or anterior spinal artery syndrome. Dec. at 6. The special master gave as a reason for this preliminary step the fact that the two diseases “differ in their etiology and differ in the part of the body affected.” *Id.* Thus, the special master decided that “determining which condition affects Dr. Broekelschen is one step in determining the cause for Dr. Broekelschen’s condition.” *Id.*

Relying upon *Kelley v. Secretary of Health & Human Services*, 68 Fed. Cl. 84 (2005), petitioner argues that the special master erred in initially determining Dr. Broekelschen’s diagnosis. Pet. at 15. Petitioner cites the following language from *Kelley*:

The Vaccine Act does not require petitioners coming under the non-Table injury provision to categorize their injury; they are merely required to show that the vaccine in question caused them injury—regardless of the ultimate diagnosis.
Kelley, 68 Fed. Cl. at 100.

However, as noted by the special master, *Kelley* is distinguishable from this case. Dec. at 6. The diagnostic question in *Kelley* involved two closely related conditions, “GBS and CIDP are conditions on a spectrum, and the distinctions between them are hopelessly blurred.” *Kelley*, 68 Fed. Cl. at 102. Both diagnoses at issue in *Kelley* related to autoimmune diseases caused by inflammation of the myelin sheath covering peripheral nerves. *Id.* at 86, nn.1, 2. The underlying process is the same in each disease. *Id.* at 97. Given the similarity of the two diseases and their underlying cause, it made sense in *Kelley* not to require identification of the diagnosis. In addition, in *Kelley*, petitioner’s expert provided a medical theory and opinion based on the injury suffered, independent of the precise diagnosis. *Id.* at 88-89.

That is not the situation in this case. Although the two conditions at issue here—transverse myelitis and anterior spinal artery syndrome—share some nomenclature and present with many of the same symptoms, their underlying causes are different and require different treatments. Dec. at 16-17. Unlike *Kelley*’s expert, petitioner’s expert, Dr. Steinman, did not advance a medical theory or opinion on causation based upon a generic injury. Instead, his primary theory and opinion were premised upon a diagnosis of transverse myelitis. Dr. Steinman provided limited testimony or evidence that the flu vaccine caused anterior spinal artery syndrome. *Id.* at 24-25; Pet. at 9-11. Thus, *Kelley* is distinguishable from the case at hand, and it was appropriate in this case—where virtually all of the evidence on causation was dependent on the diagnosis of petitioner’s condition—for the special master to determine the proper diagnosis before applying the *Althen* test.

B. The Special Master’s Factual Determinations Were Not Arbitrary, Capricious, or Contrary to Law

As is often true in Vaccine Act cases based on a theory of actual causation, the expert medical testimony was important in this case. The special master’s ultimate conclusion turned largely on his decision to credit the evidence and theory advanced by the Government’s expert, Dr. Greenberg, rather than the testimony and theory propounded by petitioner’s expert, Dr. Steinman. As noted above, judicial review of the special master’s evaluation of the evidence is very limited.

Summarizing his assessment of the experts’ testimony on the issue of diagnosis, the special master credited the testimony of respondent’s expert, over that of petitioner’s expert, stating that Dr. Greenberg’s credentials and background entitled his opinion to “more weight,” and that Dr. Greenberg’s demeanor suggested that he was providing “the basis for his opinion as forthrightly as possible.” Dec. at 13. The special master found that Dr. Greenberg’s theory was more plausible than Dr. Steinman’s because it took account of all the evidence. In contrast, the special master found that Dr. Steinman “ignored one of the most valuable pieces of evidence, the angiogram.” *Id.* The special master specifically discussed all of Dr. Steinman’s testimony concerning the angiogram and found that it was “very indirect and not persuasive.” *Id.* at 22. On these bases, he determined that Dr. Greenberg’s opinion was more persuasive. *Id.* at 13. Such findings regarding the relative persuasiveness of competing medical evidence are “virtually

unchallengeable on appeal.” *Lampe*, 219 F.3d at 1362. As stated by the Federal Circuit, Congress assigned to a group of specialists, the Special Masters within the Court of Federal Claims, the unenviable job of sorting through these painful cases and, based upon their accumulated expertise in the field, judging the merits of the individual claims. The statute makes clear that, on review, the Court of Federal Claims is not to second guess the Special Masters’ fact-intensive conclusions; the standard of review is uniquely deferential for what is essentially a judicial process. . . . That level of deference is especially apt in a case in which the medical evidence of causation is in dispute.

Hodges v. Sec’y of Health & Human Servs., 9 F.3d 958, 961 (Fed. Cir. 1993).

Petitioner asserts that the special master “utilized the pretense of credibility to circumvent looking at the record as a whole and to manufacture a basis in [sic] which to reject petitioner’s evidence of causation.” Pet. at 20. Petitioner argues both that this is arbitrary, *id.* at 20-27, and that the special master “has attempted to recast the issue in terms of credibility rather than *burden*” therefore applying an incorrect legal standard to the facts. *Id.* at 27-28 (emphasis in original). On June 19, 2008, petitioner filed a supplement to his motion for review (docket entry 72-2) (“Pet.’s Supp.”). In his supplement, petitioner asserts that the opinion of the Federal Circuit in *Andreu*, decided on June 18, 2009, supports his argument that in this case, a credibility finding “was improperly used in order to substantiate the improper and unreasonable picking and choosing of the evidence.” Pet.’s Supp. at 3. Petitioner relies on the language in *Andreu* that a special master “can[not] cloak the application of an erroneous legal standard in the guise of a credibility determination.” *Andreu*, 569 F.3d at 1379.

Respondent argues (docket entry 77, July 24, 2009) (“Resp.’s Supp.”) that although in *Andreu* the Federal Circuit found that the special master erroneously rejected petitioner’s expert’s theory of causation “under the rubric of a ‘credibility’ determination,” this case is distinguishable from *Andreu*. Resp.’s Supp. at 2 (quoting *Andreu*, 569 F.3d at 1379). The Court agrees with respondent that in this case the special master thoroughly analyzed all the evidence, including Dr. Steinman’s testimony, and in the context of the entire record, found the medical theory set forth by respondent’s expert to be more persuasive. This evaluation is the job of the special master. See *De Bazan v. Sec’y of Health & Human Servs.*, 539 F.3d 1347, 1353 n.4 (Fed. Cir. 2008) (“[T]he special master admitted and weighed both parties’ evidence but simply decided that the government’s evidence was more persuasive.”). *Andreu* did not alter the causation standard or the standard of review applicable in Vaccine Act proceedings. *Andreu*, 569 F.3d at 1379 (“[C]onsiderable deference must be accorded to the credibility determinations of special masters.”) (citing *Bradley v. Sec’y of Health & Human Servs.*, 991 F.2d 1570, 1575 (Fed. Cir. 1993)).

The special master in this case did not use a credibility determination as a ruse to pick and choose the relevant evidence or to apply an incorrect legal standard. Instead, the special master cited the demeanor of the experts as one factor among many informing his decision. Dec. at 21-22. The special master carefully addressed, in detail, the entire record, including the results of all

tests, the medical records created during and after petitioner's hospitalization, all of the treating physicians' notations relied upon by petitioner, and the theories advanced by each party's experts. *Id.* at 17-28. The special master considered the relevant evidence of record, drew plausible inferences from that evidence, and articulated a rational basis for his findings. His decision discusses in detail each of the main points raised by the parties, including the petitioner's claim that he suffered transverse myelitis. Given the highly deferential "arbitrary and capricious" standard of review that applies to factual findings in Vaccine Act cases, this Court is not persuaded that the special master's findings should be overturned.

C. The Special Master Applied the Correct Legal Standard

After hearing the testimony of the parties' experts and reviewing all the evidence, the special master determined that petitioner failed to meet the first evidentiary requirement under *Althen* to show a medical theory causally connecting the flu vaccine to petitioner's anterior spinal artery syndrome. Dec. at 24. In reaching this conclusion, the special master analyzed petitioner's evidence to determine if the theory advanced by petitioner's expert was supported by a "sound and reliable medical or scientific explanation." *Id.* (citation omitted). The special master found that petitioner's evidence that a vaccine could cause anterior spinal artery syndrome (a 1983 medical journal article, which found that 9 of 60 patients studied had anterior spinal artery syndrome that was post-infection or caused by vaccination) did not contain any *theory* explaining *how* the vaccine might have caused anterior spinal artery syndrome, which is the first prong of the *Althen* test. *Id.* at 26. The special master likewise found that Dr. Steinman's testimony did not set forth a coherent medical theory causally linking the flu vaccine to anterior spinal artery syndrome. *Id.* at 27. Thus, petitioner failed to establish a *prima facie* case with respect to one of the three elements required by *Althen*, and the special master properly concluded that petitioner was therefore not entitled to compensation. *Id.* at 24-28.

Petitioner asserts that he met his burden to establish a *prima facie* case under *Althen* and that by finding otherwise, the special master committed legal error by not shifting the burden to respondent to prove that something other than the vaccine caused petitioner's injury, pursuant to *Walther*. Pet. at 29. Petitioner appears to argue that by accepting the Government's evidence, which indicated that petitioner's diagnosis was anterior spinal artery syndrome not caused by a vaccine, the special master effectively required petitioner to eliminate alternative causes of petitioner's symptoms in contradiction to *Walther*. That case does require that once the petitioner has established a *prima facie* case, the Government must show that the injury was in fact caused by factors unrelated to the administration of the vaccine. *Walther*, 485 F.3d at 1151. However, prior to such a burden shift, "it is clearly the petitioner's burden to prove that the vaccine was a cause-in-fact of [his] injuries." *De Bazan*, 539 F.3d at 1353 (citing *Althen*, 418 F.3d at 1278). In describing petitioner's initial burden, the special master did not impose an impermissible burden to eliminate alternative causes. *Id.* ("The government, like any defendant, is permitted to offer evidence to demonstrate the inadequacy of the petitioner's evidence on a requisite element of the petitioner's case-in-chief. [Petitioner] has identified no statute, regulation, or precedent that indicates that the special master is required to only consider the

petitioner's evidence as to whether the vaccine was a cause-in-fact."). Here, as in *De Bazan*, "[the Government's evidence] bore directly on whether the medical evidence supported concluding that the *vaccine* could be the cause-in-fact, which is clearly part of the petitioner's case-in-chief." *Id.* at 1354 (emphasis in original). The special master did not err by relying on the government expert's testimony and other evidence of record to conclude that there was an insufficient basis in this case for shifting the burden of proof to the Government to establish an alternative cause.

Here, the special master's analysis of Dr. Steinman's reports, testimony, and medical literature reasonably led him to conclude that neither plaintiff's evidence nor the record as a whole evidenced a coherent theory supporting a finding that the vaccine caused petitioner's injury. These findings are well supported by the record as a whole, and they are entitled to deference in this court. Accordingly, this Court affirms the special master's finding that petitioner did not meet his burden to prove a prima facie case that the flu vaccine caused his injury.

CONCLUSION

For the reasons stated above, the petitioner's motion for review of the special master's decision is **DENIED**, and the special master's decision of February 4, 2009 is **AFFIRMED**. The clerk of the court is directed to enter judgment in favor of respondent accordingly.

IT IS SO ORDERED.

s/ George W. Miller
GEORGE W. MILLER
Judge