# The Philosophy of the Burden of Proof in Medical Liability for The Harm Caused to the Unborn: Conversation With Experts as an Epistemological Paradigm of Judicial Assessment

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**Abstract**
The traditional conception of evidence attributed paramount importance to expert opinions as the primary mechanism for incorporating specialized knowledge into the judicial process. However, the jurisprudential evolution of the Colombian high courts has fostered the recognition of expert consultation as a tool aimed at complementing and clarifying technical issues relevant to the judicial decision. Although this does not constitute an independent means of proof, its function is to provide specialized elements that allow the judge to better understand the scientific context of the litigation and to more rigorously assess other evidence. This transformation in evidentiary philosophy is especially relevant in medical liability cases, particularly those arising from obstetric care, where scientific literature has highlighted the complexity of determining the nature of perinatal neurological injuries and establishing the causal link between medical intervention and the alleged harm. In these types of disputes, the judicial decision requires a critical and integrated assessment of the available scientific evidence, through the adoption of the preponderance of the evidence, rather than relying exclusively on the opinion of a single expert.

**Keywords**: Evidence, expert consultation, expert testimony, damage, causal link.

## 1. INTRODUCTION

Litigation arising from medical malpractice during birth, especially those arising from acute fetal distress and permanent cerebral palsy, represent one of the most complex scenarios within medical liability. In this sense, neonatal hypoxic-ischemic encephalopathy (HIE) is one of the most frequent forms of acute brain injury during the perinatal period. Its appearance is mainly associated with insufficient oxygen supply and a decrease in cerebral perfusion that can occur before, during, or immediately after birth (Glass, 2018).

For Goswami, Guillot & Tam (2020), therapeutic interventions instituted in the first days of life play a decisive role in reducing mortality and improving long-term outcomes, which is why they represent one of the main objectives of neonatal medicine today. Scientific evidence indicates that only a limited percentage of cases of cerebral palsy are related to episodes of intrapartum asphyxia, since their

appearance can be due to multiple prenatal, intrapartum, and postnatal factors. Consequently, the analysis should focus on comprehensively reconstructing the obstetric care provided, rather than relying exclusively on the neurological outcome presented by the newborn (Clark, Basraon, & Hankins, 2013).

For the most part, the judicial discussion revolves around the appropriateness of fetal monitoring, the interpretation of the warning signs, the timely indication of cesarean section and the determination of whether perinatal hypoxia was avoidable according to the *lex artis*. In this context, given that it is highly specialized knowledge, compliance with the burden of proof is especially complex for the plaintiff, who, as a general rule, does not have the necessary technical knowledge to dispute the arguments put forward by the specialists.

This circumstance considerably increases the argumentative burden of the parties, especially that of the plaintiff, who must resort to the different means of evidence to build the causal link and achieve the conviction of the judge. In this sense, Gascón Abellán (2017) argues that, in liability proceedings for damages, it is essential to prove that the conduct under analysis constitutes the cause of the damage caused. However, the demonstration of this causal link usually faces scenarios of uncertainty or doubt, since, even when relevant evidence is provided, it is not always possible to conclude with the degree of certainty required by the applicable standard of proof that the action in question was the one that actually caused the damage.

From this perspective, the main purpose of the evidentiary institution is the search for the truth. However, it is recognized that, along with this essential and priority objective, other values and interests converge in the judicial process that, in certain circumstances, may come into tension with this purpose and justify certain limitations from the epistemological point of view (Ferrer Beltrán, 2007).

Consequently, the medical history, institutional protocols, and scientific concepts acquire special relevance and must be integrated into a coherent causal explanation that makes it possible to establish whether the neurological damage was due to the natural course of an obstetric complication or, on the contrary, to an unjustified delay in medical care. Therefore, the controversy ceases to be exclusively medical and becomes an eminently evidentiary, technical, and scientific problem.

Although there is abundant medical literature that explains the factors associated with the appearance of various neurological complications during childbirth, such as hypoxic-ischemic encephalopathy and acute fetal distress, there are few studies that analyze these phenomena from the legal epistemology of evidence, particularly in relation to expert evidence and the role played by conversation with experts as a mechanism of convincing, building the causal link and incorporating scientific knowledge into the judicial process.

However, this article aims to analyze, from legal epistemology and the contemporary philosophy of evidence, the model of evaluation of scientific evidence developed by the Supreme Court of Justice of Colombia in Judgment

SC 9193-2017, with the purpose of establishing the scope of the conversation with experts in the construction of the causal link within the processes of medical civil liability for neonatal neurological injuries.

## METHODOLOGY

The research was developed through a qualitative approach of a legal nature, based on a hermeneutical-analytical design oriented to the epistemological analysis of judicial evidence in medical civil liability processes derived from damages caused before and during birth. This design allowed to examine the configuration, development and argumentative structure of judicial decisions, as well as the substantial evolution of evidentiary institutions based on jurisprudential evolution and the philosophical foundations that support the rational evaluation of evidence.

Its purpose was to analyze, understand and interpret the nature, structure and incidence of expert evidence and together with scientific knowledge as structural axes of the causal link in medical liability processes. Consequently, the information was obtained through the implementation of a systematic review of normative, doctrinal, jurisprudential and scientific sources. In this context, the research incorporated a review developed in accordance with the PRISMA methodology. Its implementation was born as an instrument for the integration of scientific evidence, expert evidence and specialized knowledge necessary to analyze the construction of the causal link in the neurological damage caused.

The implementation of this systematic review strengthens the quality, transparency, and reproducibility of the study, benefiting all those who produce scientific evidence as well as those who evaluate and use it in decision-making through public policies. The rigorous description of the methodological design favors the critical evaluation of the procedures used, allowing the consistency, validity, and reliability of the results achieved to be appreciated. Likewise, the systematic organization of the evidence from the included studies facilitates its interpretation and makes it possible for those responsible for public policymaking and health system actors to assess its transferability to different scenarios, strengthening decision-making based on solid and quality scientific evidence (Matthew et al., 2021).

The study was descriptive, analytical, and interdisciplinary. It was descriptive because it identified and examined the normative, jurisprudential, and doctrinal framework related to the evaluation and impact of expert evidence and scientific knowledge in medical liability proceedings. It was analytical because it critically examined the limitations faced by plaintiffs in proving the causal link, as well as the reconstruction of medical practice based on the clinical history versus the subjectivity of the treating physician. Its interdisciplinary nature was due to the integration of categories from law, the philosophy of evidence, legal epistemology, and evidence-based medicine.

The research was aimed at reconstructing the evidentiary reasoning developed by the Supreme Court of Justice to establish the scope of the conversation with

experts as a mechanism for incorporating specialized knowledge into the judicial process and its impact on the accreditation of the causal link in litigation derived from acute fetal distress and permanent cerebral palsy.

From this perspective, the study was inscribed in contemporary legal epistemology, which conceives the judicial decision as a rational process of construction and evaluation of hypotheses supported by the joint assessment of evidence. As a main method, legal hermeneutic analysis was used, complemented with tools from argumentation theory, philosophy of evidence and legal epistemology.

The unit of analysis was constituted by Judgment SC 9193-2017 of the Civil Cassation Chamber of the Supreme Court of Justice, selected for its relevance in terms of the evaluation of scientific evidence in medical liability proceedings. The ruling was chosen because it develops a model for the rational evaluation of scientific evidence, conceptually differentiates conversation with experts from technical testimony and expert opinion, and articulates categories from the philosophy of evidence, legal epistemology, and evidence-based medicine to solve a complex problem of medical causality.

The interpretative process was developed from five analytical categories: the contemporary philosophy of the burden of proof; the rational evaluation of scientific evidence; the conversation with experts as an epistemological instrument; the differentiation between party statement, technical testimony and expert opinion; and the construction of the causal link in neonatal neurological lesions.

The methodological design was organized in six phases: i) construction of the systematic review protocol according to the PRISMA methodology; ii) identification and selection of the documentary corpus; iii) extraction and systematization of the information; iv) dogmatic, legal and jurisprudential analysis; v) analysis of the incidence of expert evidence and scientific knowledge; and vi) judicial assessment.

According to Booth, Sutton & Papaioannou (2016), the literature review must be carried out through a systematic procedure, as this approach reduces the risk of bias and facilitates the identification of a broad, pertinent, and representative set of scientific evidence available on the object of study. Systematicity is an essential component of methodological rigor in scientific research; therefore, the review of the literature must be subject to criteria of planning, transparency, and reproducibility equivalent to those required in the other stages of the research process. Similarly, the application of a systematic method favors the structured organization of the findings, strengthens the reliability of the results, and allows demonstrating the methodological soundness with which the research was developed.

The search equations were designed using three thematic categories, which allowed the elements of the SPICE model to be integrated for application in academic, legal, and biomedical databases. The formulation of structured and

focused questions constitutes the initial stage of evidence-based practice in disciplines such as medicine, nursing, education, and library science, since it allows the information needs derived from practice to be converted into questions that can be answered through the systematic search for evidence (Rosenberg & Donald, 1995; Sackett & Rosenberg, 1995; Booth, 2000).

**Category 1. Neurological damage, fetal distress and complications associated with birth.** This category mainly responds to the Setting (S) and Perspective (P) components of the SPICE model. Its purpose was to identify the clinical context of the research problem, the obstetric procedures involved, the associated neurological lesions and the relevant elements for the analysis of the causal link. From these elements, the following search equation was formulated:

**("neurological injury" OR "neonatal brain injury" OR "hypoxic-ischemic encephalopathy" OR "cerebral palsy" OR "fetal distress") AND ("newborn" OR "neonate" OR "delivery" OR "labor" OR "delivery")**

The purpose of structuring this search equation was to identify and compile the available literature on the medical history, as well as the damages, complications, and adverse events associated with medical malpractice before and during childbirth.

**Category 2. Burden of proof, obstetric medical liability, and neurological damage.** This category is directly related to the legal dimension of the research problem and focuses on the Perspective (P) component of the SPICE model. The review addresses the problem from the perspective of victims, health professionals, health service providers, and legal operators, actors involved in medical care, conflict resolution, and the guarantee of victims' rights. It incorporates the Evaluation (E) component, which examines the effectiveness of the current evidentiary regime and the main barriers to structuring and configuring the causal link. Based on the above, the following search equation was formulated.

**("burden of proof" OR "dynamic burden of proof") AND ("medical liability" OR "obstetric medical liability" OR "neurological damage")**

Based on these parameters, the search strategy made it possible to identify investigations, doctrinal contributions and judicial decisions related to the attribution of medical responsibility in obstetric procedures.

**Category 3. Expert opinion, expert evidence and clinical history.** This category corresponds to the evidentiary dimension of the research and constitutes one of its fundamental thematic axes. It is directly related to the Intervention (I), Comparison (C) and Evaluation (E) components of the SPICE model. Its purpose is to analyze the importance of expert evidence and scientific knowledge as essential elements for the construction of the causal link and the basis of the judicial decision, evaluating its advantages, limitations and effectiveness in the face of the difficulties presented by its use in medical liability processes. Based on these elements, the following search equation was formulated.

**("expert opinion" OR "expert evidence" OR "medical history") AND ("medical liability" OR "health liability")**

The purpose of this search equation was to identify and compile research, doctrinal contributions and judicial decisions related to medical liability in obstetric procedures, the reconstruction of medical practice from the medical history and the evidentiary limitations for the reconstruction of the facts.

The process of selection, identification and recovery of scientific, doctrinal, legal and academic production included the consultation of four electronic databases: PubMed, Web of Science, Scopus and Scielo. These were selected due to the need to carry out an interdisciplinary review that will integrate medical and legal evidence. The inclusion of PubMed is justified by its wide coverage in the biomedical field, which provides the necessary scientific support to understand the origin, treatments and sequelae of neonatal neurological damage.

For their part, Web of Science and Scopus provide an interdisciplinary approach that allows the integration of research from the legal, medical, economic and social sciences, facilitating a comprehensive analysis of the research problem. In turn, Scielo provides the complement with respect to the Ibero-American scientific literature.

In conclusion, Figure 1 analyzes the incidence and contribution of each database to the extraction matrix of the systematic review.

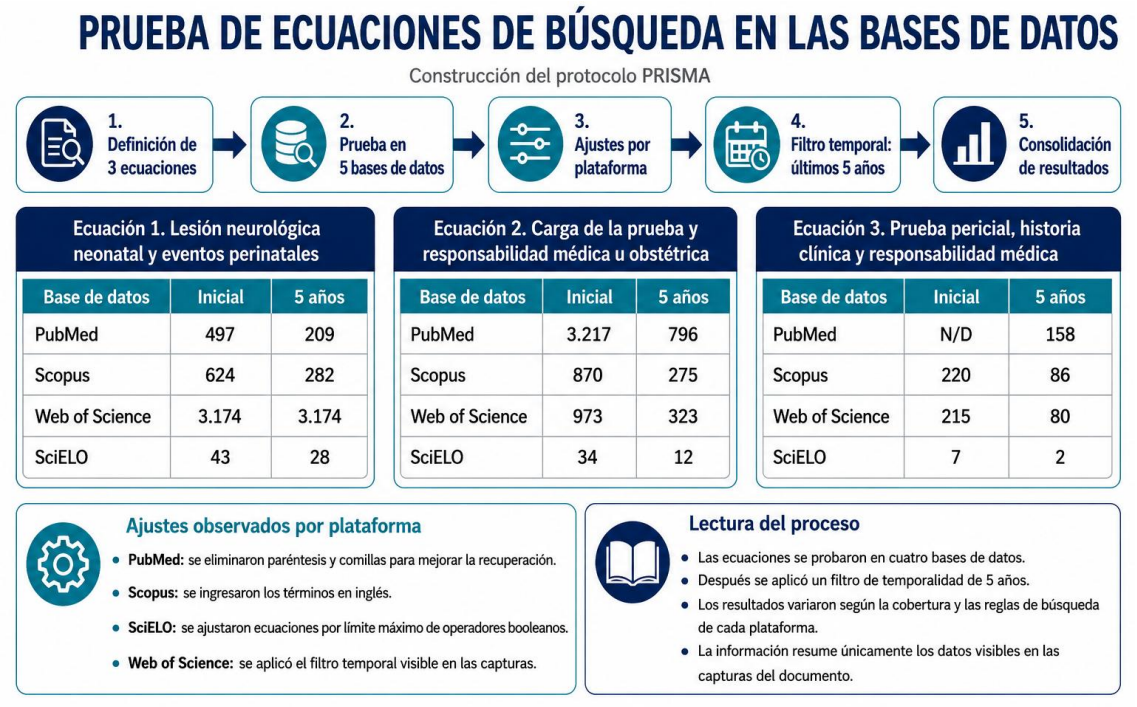



**Figura 1.** creacion propia a partir de los resultados generados por cada base de datos.

The results show that each of the equations presents a different behavior depending on the specialty. The documentary retrieval was heterogeneous among the databases, which concludes that no platform, on its own, was sufficient to identify all the relevant evidence of the research topic, this methodologically justifies the use and search in different databases. The application of the temporal filter of the last five years reduced the volume of results. In this way, it allowed concentrating the search on evidence and recent studies, being methodologically more pertinent to answer the research question. This purification strengthened

the timeliness of the systematic review and reduced the incorporation of outdated literature.

Consequently, the extraction matrix fulfilled a function that transcended the simple organization of the information. Its application made it possible to transform the recovered records into systematized, comparable, analytically useful evidence and to support the conclusions. It also strengthened the transparency and reproducibility of the PRISMA protocol, by justifying the information incorporated from each source, its relevance and its contribution to the central categories of the study.

Figure 2 shows the results incorporated into the documentary analysis and extraction matrix of the PRISMA system, as follows.

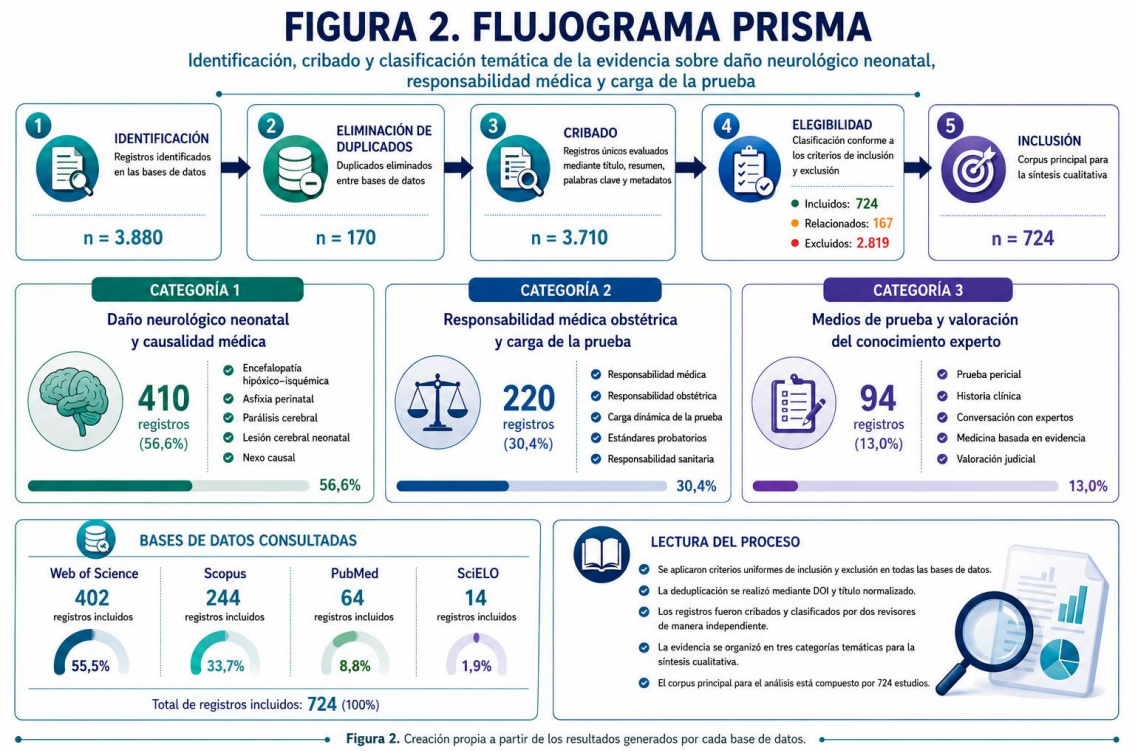



**Figura 2.** Creación propia a partir de los resultados generados por cada base de datos.

## RESULTS

This section analyzes the criteria developed in Judgment SC 9193-2017 of the Supreme Court of Justice, with the purpose of identifying the epistemological model of evaluation of scientific evidence used by this corporation in medical civil liability processes. To this end, the evolution of the burden of proof and the evaluation of evidence will be examined; subsequently, the scope of the conversation with experts will be established as a mechanism for incorporating specialized knowledge into the judicial process and its application in litigation derived from acute fetal distress. Finally, the criteria used by the Court to reconstruct the causal link in medical controversies characterized by high scientific complexity will be identified.

### Rational assessment of expert evidence in medical liability

For decades, a large part of medical liability litigation focused on the idea that the expert opinion was the main – and even the only – mechanism for explaining complex scientific issues. In this scenario, the specialized knowledge of medico-

legal experts is essential to integrate scientific knowledge into the judicial process. Their function includes verifying the conformity of medical action with the *lex artis* and the standards of evidence-based medicine, establishing the existence or absence of the causal link between the healthcare conduct and the alleged damage, and quantifying the extent of biological damage through technical assessments characterized by objectivity, impartiality and scientific rigor. This task makes it possible to provide the judge with suitable elements of judgment for the proper evaluation of evidence and the adoption of legally based decisions (Bal, 2009).

However, this problem is structured around those limitations of interpretation of clinical protocols, scientific literature, specialized knowledge, and complex medical controversies. In this scenario, the diversity of concepts, criteria, and subjectivity in medico-legal reasoning continues to represent a significant challenge, particularly in litigious contexts related to health liability. Differences in the approaches used and the assessment of clinical history can lead to substantially different conclusions, even when experts examine the same documentary information. This heterogeneity not only poses difficulties from a methodological point of view, but also constitutes a factor of uncertainty that can affect judicial decision-making and the proper management of institutional risks (Murrie & Boccaccini, 2015., cited in Maliha, Gerke, Cohen, Parikh, 2021).

The excessive dependence on the expert opinion to adopt the ruling of the process can transfer to the expert a function that legally corresponds to the judge, such as the comprehensive evaluation of the evidentiary material. As established by Murrie and Boccaccini (2015), one of the most debated issues in the field of expert evidence is to determine whether experts can maintain objectivity and technical rigor when they are appointed by one of the parties within a process. Various studies have shown that the relationship of the expert with the person requesting his services can influence the formulation of his conclusions, even when these are based on procedures and instruments that, in principle, are considered objective. This phenomenon has been identified in the specialized literature as *"loyalty to the party that hires him" (adversarial allegiance),* and constitutes one of the main factors of concern regarding the impartiality of expert evidence.

The main causes of medical liability claims in the obstetric field are associated with non-compliance with established standards of care, including protocols and clinical guidelines; diagnostic errors or fetal distress, which require timely intervention; complications and failures that occur during labor, the consequences of which can generate serious sequelae for the newborn (Shi et al. 2023). In this context, the expert's opinion can acquire a significant influence on the judicial decision, to the point that the expert's scientific opinion comes to prevail over the judge's autonomous exercise of evidentiary assessment, despite the risk that his conclusions may be influenced by the position of the party who requested his intervention.

Mehta, Shah & Bhide (2022) point out that the specialized literature recognizes that neurological lesions of perinatal origin often present significant difficulties in determining their etiology. In many cases, it is not possible to establish with

certainty whether the damage is the result of an intrapartum hypoxic-ischemic lesion or whether it responds to other prenatal, genetic, infectious, or metabolic causes. As a result, different experts may propose reasonable, but incompatible scientific hypotheses, about the origin of the damage, a situation that increases causal uncertainty and makes the assessment of expert knowledge a decisive element in the judicial process.

The controversies inherent in scientific knowledge have driven a transformation in the way the function of the burden of proof is conceived within the judicial process. Instead of understanding it exclusively as a subsidiary rule to resolve situations of factual uncertainty, the contemporary theory of evidence conceives it as a mechanism aimed at the rational justification of jurisdictional decisions. From this perspective, the burden of proof ceases to be a merely distributive criterion and begins to play a central role in the construction and corroboration of hypotheses about the facts, based on a joint, logical, critical and contextual assessment of all the available elements of conviction (González Coulon, 2022).

In accordance with the above, the doctrinal contributions and jurisprudential developments derived from contemporary legal epistemology acquire special relevance, particularly those related to the prevailing probability, abductive inferences, corroboration of hypotheses and the rational motivation of judicial decisions. These approaches make it possible to overcome traditional conceptions based exclusively on the hierarchy of certain means of evidence or on the requirement of absolute corroboration, to privilege reasoning that recognizes that the determination of the causal link must be based on a rational, joint and contextual evaluation of the evidentiary material, even when it is not possible to achieve absolute certainty about the facts.

Consequently, the assessment, interpretation and application of expert evidence in medical liability proceedings cannot be based and understood exclusively on the conviction and explanation of the expert or on the persuasive force of his or her report. The complexity of medical controversies, the existence of divergent scientific hypotheses and the risk of bias associated with the appointment of the expert require the judge to adopt a model of rational assessment of the evidence, based on the joint, logical and contextual analysis of all the evidence. From this perspective, its evidentiary effectiveness depends on consistency with the medical history, scientific literature, medical protocols and other means of conviction incorporated into the process.

**Conversation with experts and its application in disputes arising from acute fetal distress**

One of the most relevant contributions of the recent jurisprudence of the Colombian Supreme Court of Justice is to distinguish conversation with experts from expert opinion and traditional technical testimony. Experts called to the process to present scientific or technical knowledge on general issues of a discipline do not act as witnesses. Their intervention responds to the need to enlighten the judge about the state of specialized knowledge, so it is legally inappropriate to grant them the status of witnesses (Supreme Court of Justice,

2017).

According to procedural regulations, testimony corresponds to the statement made by a third party unrelated to the litigation about facts that he or she perceived directly through his or her senses, specifying the circumstances of time, manner and place in which they occurred. In contrast, the technical witness not only has direct knowledge of the facts in dispute, but also has specialized training or experience of a technical, scientific or artistic nature, which allows him or her to provide an explanation based on such knowledge about the circumstances observed (Law 1564 of 2012, Art. 220).

Indeed, conversations held with experts cannot be considered as technical testimony, since their nature and evidentiary purpose are substantially different. The expert consulted does not testify about specific facts that he or she has perceived, but rather issues a general concept based on his or her training and specialized experience, which is why his or her intervention constitutes a means of conviction different from technical testimony (Supreme Court of Justice, 2017). Technical opinions prepared by experts or specialists, even if they are not expressly provided for as means of proof in procedural legislation, are admissible in judicial proceedings in application of the principle of freedom of evidence, which is why they can be assessed by the judge as suitable elements for the formation of his conviction, provided that they are evaluated together with the other means of evidence.

This jurisprudential development represents an important modification within the evidentiary philosophy, recognizing that scientific knowledge integrates the hermeneutical context from which the judge interprets the evidence, without replacing the jurisdictional function of assessment. In the field of gynecology and obstetrics, clinical practice based on evidence-based medicine requires the specialist to master the fundamentals of clinical epidemiology, carry out systematic and efficient searches of the scientific literature, and critically evaluate the available information. This process allows him to substantiate the resolution of clinical problems and make the most appropriate diagnostic and therapeutic decisions according to the best available scientific evidence (Carvajal Cabrera, 2023).

The judicial controversies related to acute fetal distress constitute a paradigmatic example of the contemporary evolution of the theory of evidence. Determining whether there were early signs of fetal hypoxia, whether the reduction in fetal movements required immediate obstetric intervention, or whether the cesarean section should have been performed before birth requires articulating scientific knowledge from obstetrics, neonatology, pediatric neurology, and evidence-based medicine, together with specialized techniques for the analysis of the medical history. In this context, the reconstruction of the facts cannot be based on isolated assessments, but on a rational, comprehensive, and contextual assessment of the available scientific evidence, which allows the judge to make a sufficiently justified decision on the existence of the causal link and possible medical liability, in various and diverse specialized health contexts (López-Oliva, 2010, 2014; López-

Oliva et al., 2024; García & López, 2025).

Judgment SC 9193-2017 precisely addressed this problem by analyzing the value that should be attributed to the explanations offered by specialists from different medical disciplines, as well as the way in which such interventions should be harmonized with the clinical history and with the rules of sound criticism in order to rationally reconstruct the causal link between obstetric care and the hypoxic-ischemic encephalopathy that resulted in permanent cerebral palsy.

The jurisprudential evolution developed by the Supreme Court of Justice shows a significant transformation in the construction and evaluation of scientific evidence within the judicial process. In this context, the purpose of the conversation with experts is to enlighten the judge about the knowledge, procedures and scientific criteria applicable to the case under analysis, in development of the principle of freedom of evidence. Based on these contributions, the judge can incorporate this specialized knowledge into his or her evaluation process, provided that he or she examines it together with the other means of evidence and in accordance with the rules of sound criticism.

In matters of medical liability, and especially in controversies related to acute fetal distress and hypoxic-ischemic encephalopathy, the determination of the causal link constitutes one of the main evidentiary challenges. The etiological complexity of these injuries prevents, as a general rule, causality from being inferred from a single means of proof or from the expert opinion alone. Consequently, the reconstruction of the facts requires an integrated assessment of scientific knowledge from obstetrics, neonatology, pediatric neurology and evidence-based medicine, compared with the medical history, diagnostic records and other documentary elements incorporated into the process. Under this approach, the judicial decision finds its justification in a rational, critical and contextual assessment of the entire body of evidence, reinforcing the epistemological soundness of the causal inference and the legitimacy of the attribution of medical responsibility.

**The rational and joint assessment of the expert's knowledge as the basis for the judicial decision**

In the Social and Democratic State of Law, the jurisdictional function is of great importance. Understood as the obligation of State institutions to know, process and resolve the conflicts that are submitted to them in accordance with the legal system (Espinoza & Rivas, 2019). In this context, the legitimacy and credibility of judicial decisions are not based solely on the authority of the court or on the formal application of the legal system. Their acceptance depends, mainly, on the quality of the argumentation developed, the rationality of the reasoning used and the sufficiency of the motivation that justifies the conclusions reached. In this context, evidence is the main instrument for reconstructing the facts in dispute within the process, which is why its assessment requires an intellectual exercise based on objective, verifiable, rational and duly motivated criteria (Taruffo, 2008).

Indeed, Puentes Trujillo (2022) states that scientific evidence is an evidentiary instrument based on knowledge produced through scientific research, whose reliability depends on the application of theories, techniques, and methodologies that are accepted, verifiable, and recognized by the specialized community. Its main characteristic lies in the fact that both the hypotheses that support it and the procedures used to obtain and validate them must be susceptible to verification and accepted by the scientific community. In this respect, it differs from other means of evidence, whose evidentiary effectiveness does not necessarily depend on standards of scientific validation

In fact, the incorporation of specialized evidence into the process does not relieve the judge of his duty to fully evaluate the body of evidence nor does it allow him to transfer that function to the expert's criterion. On the contrary, it is up to the judge to critically and rationally analyze the technical, scientific or artistic conclusions, comparing them with the other means of evidence and evaluating them in accordance with the rules of sound criticism. The purpose of the legislator in admitting this type of evidence was not to replace the judicial function, but to provide the judge with tools that allow him to understand and evaluate phenomena whose complexity exceeds the scope of ordinary legal knowledge, thus facilitating the adoption of decisions duly motivated and based on objective criteria.

Defenders of the scientific dimension of evidence promote reflection in the legal community on the challenges posed by the incorporation of specialized knowledge into the judicial process and on the criteria necessary to assess its reliability, relevance and probative force. From this perspective, expert knowledge acquires a decisive role in the reconstruction of the facts and in the rational foundation of judicial decisions (Vásquez, 2013).

In this context, the judge's function is not limited to admitting or excluding the evidence incorporated into the process, nor to accepting or rejecting in isolation the conclusions derived from them. On the contrary, it is up to him to evaluate the body of evidence in its entirety, to compare the different elements of conviction with each other, to explain the reasons that support his assessment and to justify the impact that each of them has on the formation of his conviction. This requirement responds to the duty to state reasons for judicial decisions and guarantees that the evidentiary assessment is carried out in a rational and objective manner.

In this sense, Beltrán Ferrer (2021) states that, although legal systems recognize the principle of freedom of evidence by admitting various means of evidence for the reconstruction of the facts, this freedom cannot be exercised arbitrarily. Its scope is delimited by the principle of legality and by standards of rationality that guide the judicial evaluation of evidence, especially the rules of logic, the maxims of experience, and sufficiently consolidated scientific knowledge, which constitute essential criteria to justify the factual conclusions of the process.

One of the main challenges facing contemporary justice systems is the proper evaluation of scientific evidence and the determination of its credibility.

Advances in areas such as artificial intelligence, genetics, biotechnology, and other emerging sciences have increased the technical complexity of the evidence presented in judicial proceedings. Consequently, the judge is faced with the challenge of understanding the methodological foundations of this specialized knowledge, evaluating its reliability, and appreciating its demonstrative force without renouncing the autonomous exercise of evidentiary evaluation in accordance with the rules of sound criticism.

As Luna Salas (2018) warns, the confidence inspired by scientific evidence, derived from its apparent objectivity and the use of specialized methodologies, has favored a tendency to attribute to it a probative value higher than it really corresponds. This can lead the judge to accept the expert's conclusions without subjecting them to a critical examination of their scientific basis, the validity of the methods used and the coherence of the inferences reached. In these circumstances, the risk does not lie in the use of expert knowledge, but in the substitution of the judge's critical judgment for the authority of the expert, compromising the independence of the evidentiary assessment and the requirement of a rational motivation for the judicial decision.

This problem and procedural evolution has been widely studied by contemporary doctrine. Gascón Abellán (2010) states that the rationality of the jurisdictional decision is conditioned by the soundness of the argumentative reasoning that justifies the evaluation of the means of evidence. From this perspective, the expert's opinion does not have a conclusive value in itself nor can it become an unquestionable truth. From this perspective, scientific knowledge is incorporated into the hermeneutical framework that guides the judge's evaluative activity, providing specialized elements for the reconstruction of the facts. However, its incorporation does not relieve the judge of the constitutional and legal duty to form his conviction autonomously, through a free, rational and reasoned assessment of the evidence in accordance with the rules of sound criticism (Supreme Court of Justice, 2017).

This line of jurisprudence marked a significant change in Colombian evidentiary philosophy by redefining the role of specialized knowledge within the judicial process. Instead of attributing to the expert opinion a preponderant or practically exclusive value to clarify technical issues, it is recognized that the increasing complexity of litigation requires an integrated assessment of various scientific disciplines and multiple sources of information. In effect, the determination of the facts ceases to depend on the authority of a single expert and is based on a critical analysis of the methodological consistency, reliability and quality of the available scientific evidence, thus strengthening the rationality and justification of the judicial decision.

**Reconstruction of the causal link through the prevailing probability.**

The available scientific evidence indicates that cerebral palsy is a disorder of multifactorial etiology, whose appearance may be determined by the concurrence and interaction of multiple risk factors. The establishment of the causal link is usually a relevant challenge, due to the complexity of the biological processes

involved and the difficulties in identifying with certainty the event or mechanism that triggered the neurological injury (Bhorat et al., 2021).

The recent jurisprudence of the Colombian high courts shows a transformation in the standard of evaluation of the proof of the causal link. This change implies the abandonment of a conception based on the requirement of absolute certainty to give way to the standard of preponderant or prevailing probability. For the Constitutional Court of Colombia (2018), it implies that the judge is not called upon to demand absolute certainty about the origin of the damage, but to establish, through a rational and comprehensive assessment of the scientific evidence, the expert evidence and the rules of experience, whether the hypothesis that attributes the damage to the conduct or omission of the defendant presents a higher degree of probability than the other plausible causal hypotheses.

In this context, the traditional conception that required proving the damage through a single piece of evidence is replaced by a model based on the gradual reconstruction of the causal hypothesis, based on the convergence and joint assessment of multiple clinical indications. This perspective is especially relevant in cases of obstetric damage, in which Mota et al. (2022) indicate that perinatal brain damage can affect neonates born at any stage of gestation. However, the probability of its occurrence increases when obstetric risk factors such as alterations in uterine dynamics, reduced fetal movements, deficiencies in timely fetal monitoring, and the presence of mechonated amniotic fluid concur, circumstances that require close clinical surveillance and timely care intervention.

The joint analysis of the different indications constitutes a fundamental tool for judicial operators in those cases in which the reconstruction of the causal link is not evident. This situation is especially frequent in medical liability proceedings, where scientific evidence usually offers various plausible hypotheses about the origin of the damage. In these events, it is up to the judge to fully evaluate the scientific evidence together with the other means of conviction, in order to determine whether there are sufficient elements to conclude that the actions of the health professional were decisive in the production of the damage.

In this context, all scientific hypotheses must be supported by methods and procedures recognized by the scientific community, so that their reliability and validity can be subjected to critical examination within the process. Thus, even when it is not possible to reach absolute certainty about the cause of the damage, adequate argumentation and rational assessment of the evidence as a whole allow the judge to reconstruct the causal link according to the standard of preponderant or prevailing probability.

## DISCUSSION

The results obtained allow us to delve into one of the main debates of the contemporary theory of evidence in the field of medical liability: the epistemological reconstruction of the causal link in the processes originated by neonatal neurological injuries. Although Colombian jurisprudence has undergone a constant evolution in the way of understanding and accrediting the causal relationship, the axis of this transformation lies in the reinterpretation of

the scope of the evidentiary rules and the criteria for evaluating scientific evidence.

In this scenario, a rational valuation model emerges based on the integration of scientific knowledge and contributions from experts, in harmony with the postulates of contemporary legal epistemology. From this perspective, this discussion examines how these jurisprudential developments have redefined the burden of proof as a problem of rational justification, favoring the reconstruction of the causal link in contexts characterized by scientific uncertainty and delimiting the scope and limits of conversation with experts as a mechanism for incorporating specialized knowledge into the judicial process.

**The burden of proof as a problem of rational justification**

The results obtained allow us to infer without a doubt that the evolution of jurisprudence in Colombia has generated various changes from the displacement of the traditional conception of burden to a rational and integrated model of judicial decisions. Under this understanding, the affirmation is relevant in medical liability processes derived from perinatal obstetric and neurological injuries.

This change is particularly relevant in medical liability processes derived from perinatal neurological injuries. Where, the injuries caused at birth correspond to structural or functional alterations suffered by the newborn as a result of traumatic events that occurred during labor, delivery or the period immediately related to them. However, its etiology is usually multifactorial, since various risk factors of a prenatal, intrapartum, and postnatal nature may concur in its development (Ojumah et al., 2017). This complexity makes it difficult to reconstruct the causal link, since the coexistence of multiple scientifically plausible hypotheses prevents, in many cases, the identification with certainty of what was the determining factor in the production of the injury.

From this perspective, the findings focus on analyzing the developments of legal epistemology, from which the function of evidence is not limited to establishing obligations between the parties, but to provide objective reasons that allow the legal operator to explain, justify and rationalize his decision.

As Gascón Abellán (2010) argues, the evaluation of evidence requires reconstructing sufficiently corroborated factual hypotheses through a joint analysis of all the available elements, preventing the rules on the burden of proof from replacing the rational examination of evidence. In this sense, Judgment SC 9193-2017 of the Supreme Court of Justice constitutes an important precedent in the evolution of medical liability in Colombia, recognizing that certain controversies are characterized by the existence of highly complex scientific and evidentiary problems. In such circumstances, the judge's function cannot be limited to verifying the absence or insufficiency of isolated evidence to deny claims, but must assume an active role in the comprehensive assessment of the body of evidence, rationalizing the different causal hypotheses and sufficiently motivating the reasons that support the decision adopted (Constitutional Court,

2018).

Thus, causal reconstruction requires integrating multiple sources of evidence before formulating conclusions about the existence of negligent medical action. Where the burden of proof is no longer conceived exclusively as a procedural rule for the distribution of the risk of uncertainty to become a problem of rational justification.

**Scope and limits of the conversation with experts**

In the precedent analyzed, it is based on the conceptual distinction between expert opinion, technical testimony, and conversation with experts. In this sense, Toro, Ocampo, and Tobón (2023) characterize that the participation of the expert is in a differentiated category. Their function is to make their scientific, technical, or specialized knowledge available to the process, in order to facilitate the understanding and rational evaluation of the evidence by the judge, without replacing the jurisdictional function of appreciating the evidentiary material.

For Sonny Bol (2009), the expert makes an assessment of the quality of the care provided and of the medical acts, even when there is no previously defined uniform standard to carry out such analysis. However, it is recognized that this type of assessment can be affected by a certain degree of subjectivity, which weakens the purpose of objectivity that should characterize the evidentiary activity, to the extent that some experts may adopt more flexible or lenient evaluation criteria than others.

Thus, in medical liability, the assessment of expert knowledge is one of the most complex tasks of the judge. Their function is not limited to accepting or rejecting the conclusions of the specialist, but also requires verifying the reliability, relevance and methodological quality of the testimony or concept issued, in accordance with the rules of science, logic and experience. Likewise, it is up to the judge to contrast these conclusions with the existing scientific consensus, when possible, and with the other evidence incorporated into the process, in order to determine which of the causal hypotheses offers a more consistent and better supported explanation of the facts in dispute (Toro et al., 2023).

In conclusion, the conversation with experts cannot constitute a mechanism for covertly introducing expert evidence without observing the procedural guarantees provided for this means of evidence, in particular the right of defence and contradiction. Its purpose is not to replace the expert opinion or to directly prove the facts that are the subject of the dispute, but to provide the judge with elements of understanding of the concepts, procedures and scientific or technical knowledge relevant to the dispute, thus facilitating the proper interpretation of the other means of evidence.

Consequently, the value that can be attributed to the expert's explanations will depend on their coherence and articulation with the body of evidence, without his or her assessments being able to prevail over the other evidence by the mere fact that they come from specialized knowledge. Their evidentiary effectiveness requires a rational, critical and duly motivated assessment by the judge, who must

compare them with the other elements of conviction incorporated into the process.

From this perspective, conversations with experts are not an autonomous means of evidence. It fulfils a legitimate function when it operates as instruments for contextualising and analysing scientific or technical knowledge, contributing to the understanding of aspects that go beyond ordinary legal knowledge. The legitimacy of the judicial decision cannot rest exclusively on the opinion of the expert, but on a comprehensive, reasoned and rational assessment of all means of evidence, in accordance with the rules of sound criticism and the constitutional duty to state reasons for judicial decisions.

**Integrative synthesis**

The results of the research show a significant transformation of the Colombian evidentiary model, particularly in the area of medical liability. This evolution does not imply a modification of the burden of proof in the strict sense, but of the standard of assessment and justification of the causal link, which abandons the requirement of absolute certainty to privilege a rational reconstruction of the facts based on the available evidence and the standard of preponderant probability.

Under this new conception, the analysis of the causal link in medical liability processes is based on the recognition of the uncertainty inherent in scientific and biomedical knowledge. In this scenario, conversation with experts is configured as a complementary and legitimate mechanism to incorporate specialized knowledge into the process, provided that its use and evaluation respect the principles of contradiction, freedom of evidence, and sound criticism.

This jurisprudential evolution brings judicial decisions closer to the particularities and limitations of scientific knowledge, characterized by uncertainty. Consequently, legal epistemology allows us to understand the judicial decision as the result of a process of construction, analysis and rational corroboration of the available scientific evidence.

This model offers a practical and legally legitimate response to the uncertainty that characterizes medical liability processes, by allowing decisions to be based on the comprehensive assessment of the available evidence, without depending exclusively on the expert opinion or the expert's criteria and without requiring levels of certainty incompatible with the nature of scientific knowledge.

Finally, the research shows that the adequate incorporation of scientific knowledge into the judicial process does not depend on conferring greater authority on experts, but on strengthening the judge's ability to critically evaluate the evidence and rationally motivate his conclusions. In this sense, Judgment SC 9193-2017 constitutes a relevant precedent in the consolidation of an evidentiary assessment model that harmonizes the advances of evidence-based medicine with the postulates of contemporary legal epistemology and with the constitutional requirements of motivation and rationality of judicial decisions.

## CONCLUSIONS

The research showed that civil liability arising from the damage caused to the unborn child by acute fetal distress could not be adequately resolved by a traditional conception of the burden of proof limited to distributing the risk of uncertainty between the parties. The analysis carried out showed that the determination of liability required a rational justification model capable of reconstructing the clinical sequence through the coherent integration of all available evidence.

It was established that judgment SC9193-2017 represented a turning point within the Colombian theory of evidence by shifting the emphasis from the isolated evaluation of each piece of evidence to the construction of factual hypotheses endowed with greater plausibility, consistency, and explanatory power. This transformation brought national jurisprudence closer to contemporary developments in legal epistemology and strengthened the rational motivation of judicial decisions.

The study concluded that the conversation with experts was conceived by the Supreme Court of Justice as an autonomous mechanism for incorporating scientific knowledge into the judicial process. Its function was not to replace the assessment made by the judge, but to provide the essential technical context to correctly interpret the medical evidence incorporated into the file.

It was found that the conversation with experts presented structural differences with respect to the party's statement, the technical testimony and the expert opinion. While these means of evidence were intended to prove specific facts or apply specialized knowledge on a specific case, the conversation with experts was aimed at explaining general scientific principles that served as a hermeneutical framework for the rational evaluation of the evidence.

The research made it possible to demonstrate that the medical history did not constitute a self-sufficient means of proof to establish medical responsibility. Its true value arose only when it was interpreted together with the scientific knowledge provided by the experts, the obstetric protocols, the clinical records and the other evidence incorporated into the process, in accordance with the rules of sound criticism.

It was evidenced that the reconstruction of the causal link in the cases of hypoxic-ischemic encephalopathy and permanent cerebral palsy required inferential reasoning based on concurrent scientific hypotheses and not on the existence of a single or definitive proof. Medical causality was constructed through the rational convergence of multiple clinical indications whose explanatory force could only be appreciated from their joint assessment.

The analysis carried out made it possible to establish that sound criticism acquired a much broader epistemological dimension than that traditionally recognized by procedural doctrine. The judgment under review was understood as a method of judicial rationality based on logic, experience, consolidated scientific knowledge and legal argumentation, discarding any approach based on

intuitive or subjective assessments.

It was concluded that the contemporary philosophy of evidence strengthened the judicial protection of victims of obstetric damage by requiring that the reasons for decisions be based on scientifically consistent and verifiable explanations, reducing the risk that highly technical controversies would be resolved only through formal assessments of the distribution of the burden of proof.

The research showed that the model developed by the Supreme Court of Justice transcended the scope of obstetric liability and offered methodological criteria applicable to other scenarios of high scientific complexity, including liability derived from medical devices, artificial intelligence applied to health, personalized medicine, diagnostic errors, and emerging health technologies.

Finally, it was concluded that the main contribution of the study was to demonstrate that the conversation with experts should be understood as an instrument of evidentiary rationality and not simply as an atypical modality of procedural intervention. Its proper use strengthened the search for material truth, improved the argumentative quality of judicial decisions and consolidated a model of evaluation of scientific evidence compatible with the contemporary requirements of the philosophy of evidence and effective judicial protection in medical civil liability proceedings.

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