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Can You Gauge Injury Risk or Severity From the Amount of Vehicular Property Damage in Motor Vehicle Crashes?

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An alternative title for this article might have been: "The Biggest Health Care Deception Ever Foisted on the American Public." Think about the facts, and forgive me for not rapidly citing references - they're not important here. (Besides, I've already done so rather extensively and, if you need them, you know where to find them.¹)

Every year in the U.S., there are over five million motor-vehicle-related injuries reported (how many are unreported is a matter of conjecture, but the National Highway and Traffic Safety Administration suggests it is in the range of 50 percent for low-speed crashes). I've estimated that there are about three million cervical acceleration/deceleration (CAD, a.k.a. "whiplash") injuries in the U.S. each year, and that's a fairly tight number. (It's also growing each year.) According to the Insurance Research Council (IRC), the average payout for these injuries, which includes medical costs, lost wages, pain and suffering, etc., is around \$8,000, and this amount may be conservative, considering the source. Of the three million CAD traumas, let's assume for the sake of argument that half of them make a claim. That comes out to \$24 billion per year, and it's not far from other industry and government estimates. That's a lot of money, even if shared among a dozen large corporations. So, the stage is set for a duplicity of monumental proportions.

But first, let's take a look at the facts regarding the types of crashes that cause injury. According to the largest study to date (conducted in Germany by some of my *confreres*), nearly half of these CAD patients are injured in crashes in which no significant structural damage results (i.e., discounting paint scratches or transfers, scuff marks and damaged exterior trim or cosmetics). This is consistent with a study completed in New York recently. The largest injury group in rear-impact crashes in vehicles was categorized as "no damage."

Suppose you represented the interests of the insurance industry, and you devised a way to get the attorneys representing these victims to turn them away in droves, so that the patients had no other recourse but to accept what you offered in the way of medical reimbursement and other expenses. You would potentially save billions of dollars every year.

That brings us to the ever-popular "no crash-no cash" epigram that has been gaining popularity and undeserved credibility over the past few years. In a bitter twist of irony, the people providing this credibility are the very ones it is foisted upon: the plaintiff attorneys! (Of course, many attorneys will find it difficult to turn any business away and will shamelessly encourage the plaintiff to accept the meager offer of \$2,000 to settle a claim in which the medical bills alone are higher. A percentage of something is, after all, better than a percentage of nothing. It is a cowardly display of apathy that plays itself out daily in America. But, in the process, their unwillingness to go to trial becomes widely known, which only has the effect of diminishing settlement offers every time. Years of education, it seems, do not guarantee strategic common sense. Or is it simply "herd" mentality?)

In any case, this deception has saved insurers billions of dollars. Here's how it works, if you haven't seen it firsthand.

When Patients Become Plaintiffs

The insurance company representative tells the injured party, "Sorry, but we don't believe injury is possible when the property damage is so low. We won't pay." This often drives the patient to become a plaintiff, but when the plaintiff's attorney learns that the property damage was less than some arbitrary amount, the attorney won't accept the case. With no representation, the would-be plaintiff gives up.

Alternatively, if the attorney does accept the case and takes it to trial, the attorney often fails, because the defense brings in an auto crash reconstructionist (ACR), or a team consisting of the ACR and a biomechanist, who cozen the jury with math and physics based on nothing more reliable than a series of educated guesses or "measurements" made with flexible rulers (liberally influenced by the realities of who is paying the bill. They also rely heavily on about 20 flawed papers to support their opinions. (These papers are used - or misused - so commonly that we made a formal study of their methodological flaws.² This paper has been successfully used to repudiate defense experts in several states, and has been influential in at least one Superior Court case.)

Next, the defense lawyer puts up a photograph of the rear of the plaintiff's car and asks, "Come on, how bad could it be?" (In Delaware, this tactic cannot be used unless the defense produces an expert qualified to discuss the meaning of the photograph in terms of injury risk - another example of how times can change for the better when you refuse to allow the situation to devolve. And, if such an expert claims the photo implies a low risk, a well-versed plaintiff attorney can easily impeach him with a skillful cross-examination. I didn't mention that this is a violation of jury instructions: asking them to speculate.)

Intuitively, gazing at a photo of an undamaged rear end, the jurors assume the crash was essentially a "nonevent," and therefore the plaintiff is out for a jackpot - a skullduggery they have no sympathy at all for - and they hand down a defense verdict. This further inculcates the attorneys in town that low-speed/no-damage cases are doomed, and it reinforces in the plaintiff lawyer's mind the futility of trying these cases. (Never mind that in all likelihood the attorney strategically did everything wrong, but that's a subject for another article.)

Let's do a quick postmortem on the previous scenario before we allow nihilism to spoil our holidays. This is not our inevitable *d³nouement* of destiny; no final depredation of this fine corner of practice. It does not always go that way. Trust me, I've been doing this for 20 years and have more cases under my belt than many attorneys I work with. The classic ingredients of this medicolegal quagmire are:

1. a defense bent on dissimulation ("Injuries don't happen; if they do, they all heal within six weeks," etc.);
2. ACRs and biomechanists bent on ingratiating themselves with their defense patrons, and who make spurious and selective reference to the literature and bank on the fact that nobody in the courtroom (plaintiff, plaintiff's lawyer, plaintiff's experts or jurors) understands the math, physics and, more importantly, the fundamentals of the esoteric form of traumatology they are **redefining**, their fiction of fairytale-like audacity;
3. a plaintiff's lawyer who is neither willing to pay for an ACR or biomechanist, nor is uniformly cognizant of ACR, biomechanics, traumatology, etc.; and
4. a treating doctor or expert witness with little understanding of the issues, who is unable to counter the defense strategies. (Note that many ACRs and biomechanists are honest, accurate, logical and realistic. I refer here, of course, to the those who possess few of those traits.)

This represents the most common scenario in America's courthouses today: the weakest and most pathetic attempt to bring balance to an unbalanced world. It is not surprising that the opposing defense shenanigans prevail more often than they fail; it's simply a numbers game. More importantly, though, America's disaffected attorneys are turning away in droves, virtually in a panic, from these low-speed cases. They are collectively like a boxer, outmatched by the adversary, unwilling to take a dive, and taking every punch gamely and trying not to disgrace themselves. As in a boxing match, the current game cannot last. The cruel irony is that these low-speed, minimal-damage cases are some of the most valid ones. And I must add that this has been, in all honesty, the most successful hoodwinking and the most ingenious duplicity I've been witness to in my lifetime. Ethics, of course, is an entirely different issue, but not a luxury much vaunted by the accountants of big corporations. It is a kind of social determinism, transforming blame for misconduct to social forces.

Thus, the ground is laid for an epic struggle for truth that will be the metaphorical equal to Waterloo, Gettysburg and Stalingrad as one of the decisive battles in modern public health. Make no mistake about it: If left to fester, this problem will - in no uncertain terms - cost your patients their right to be fairly compensated for reasonable and necessary medical care and it will prevent them from being compensated for pain and suffering, future medical care, and other expenses. And the next time the industry brings the no-fault issue to a voters' referendum in your state, it just might pass without the additional opposition by the trial lawyers' associations. It will also cost you, gentle reader, the ability to provide treatment to these patients and to collect your reasonable fees.

It's just another corner of your world crumbling down, like so much beach sand sliding out from under your feet in the surf. But is there much real estate left to lose? More to the point, is there anything you or I can do about it?

There is. All of the arguments I've accused the defense of making are spurious, feeble, scientifically unscripted and fatuous. Countervailing them are virtual mountains of evidence.

The mere fact that these defense tactics ever prevail is an indictment of the lack of knowledge and skills possessed by most of the plaintiff teams. If we ever expect the insurers to play fairly and settle claims in what we would consider good faith (and I take no interest in issues of pain and suffering compensation, which is the domain of others, but simply argue now for medical reimbursement necessary to return patients to health), insurers must face the uncertainty of potential large monetary losses at trial. Without that fear,

they will not change. Thus, plaintiff attorneys and their experts must educate themselves and learn the facts about CAD injury so that the common strategies of misinformation, deception and partial truths no longer prevail in the majority of cases.

Hijioka, et al.

Although I have not made reference to some of the firmament of my arguments, here is one you should read from Hijioka, et al.³ Use the following critique (reprinted by permission from the *Advanced Proceedings of Whiplash and Brain Injury Traumatology, 2002*) in conjunction with other literature to re-educate plaintiff attorneys that the "no crash-no cash" epigram is false, and that you can help them see and even prove it:

Hijjoka, et al. This is an important study in light of the popular misconception that holds that in an MVC, one can roughly gauge the likelihood of injury and its severity on the basis of property damage to the crashed vehicles. In the past several years, I have reported on this common myth many times. Several authors have reported that in the range of common frontal traffic crashes (10-30 mph), there is no statistically significant correlation between crash speed or delta V and injury risk or injury severity. Several other authors have reported that no correlation exists between crash severity and outcome, either. No studies to date have found any direct, continuous correlation between crash speeds or damage severity and the risk for injury or severity of injury. This urban legend, which no doubt had its origin in the fertile minds of those whose job is dissimulation, has done nothing but gain momentum, aided by the fact that it does otherwise sound credible on an intuitive basis. The term for this is *no crash-no cash*. So pervasive and authentic is this myth that many personal injury attorneys today will not accept a client if their vehicle damage is less than some arbitrary threshold amount.

In the current paper, the authors looked at 400 cases from the database of a Japanese insurer. Most patients were injured in rear-impact crashes. As with another Japanese study in this *Advanced Proceedings*, the sex ratio was even. Again, this may suggest a selection bias (although the authors did not describe the selection process) or it may be a reflection of the generally smaller stature of the Japanese people. We have seen in our crash testing research, for example, that smaller subjects usually experience greater head-resultant acceleration than larger subjects, and the resulting kinematics between these two disparate anthropometries vary. Is it possible that the Japanese people are more homogenous in stature across the sexes such that we do not see a difference in the risk for injury? Or is it more likely that the differences in risk between Japanese males and females is obscured or confounded by differences in crash severity, insurance coverage, or claiming behavior? This study cannot answer those questions.

The study does, however, provide us with answers to two important questions: (1) Does crash severity - as gauged by the degree of structural property damage to the subject's car - correlate with the risk for injury? (2) Does this degree of crash severity correlate with the duration of care, which can be grossly considered a gauge of the severity of the injury? They classified vehicle property damage on the basis of six grades:

Degree of Property Damage	
Grade	Damage
Grade 0	No damage
Grade 1	Slight damage
Grade 2	Damage to bumper
Grade 3	1/3 of car damage/trunk damaged
Grade 4	1/2 of car damaged
Grade 5	Total destruction of car

Although this grading scheme is not described in detail, the type of damage described by Grade 1 most likely represents cosmetic damage, such as scuff marks, paint transfers, scratched paint, broken trim pieces or taillight lenses, etc. This type of damage can still cost insurers up to several hundred dollars to repair. On the other hand, these types of crashes are often characterized as "no (structural) damage" in the U.S. Thus, the first two grades are likely synonymous with "no damage" crashes from a structural standpoint.

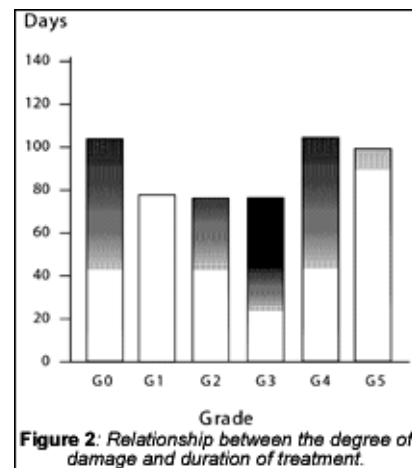
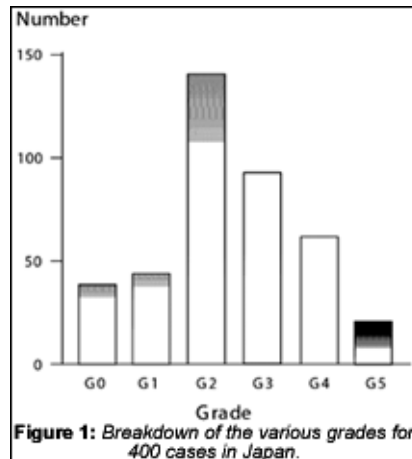
In their analysis, the authors reported that younger persons, especially those under 20 years, recovered sooner than older persons. This is consistent with other reports. The authors suggested that the whiplash grades 3 and 4 should not be included in whiplash injury. Rather, the authors suggest, these should be considered neurological conditions and treated differently. The problem is that these are whiplash injuries. They are merely complicated by neurological disorders and/or fractures. In my opinion, these additional conditions should be treated as what they are, but their presence does not diminish the significance of the CAD injury. If anything, it calls attention to the potential severity of the condition. To suggest that a nerve root injury or fracture somehow eclipses or negates the more fundamental CAD injuries of disc damage or ligamentous instability is illogical. Moreover, this would leave us with a grading system, which does not span the entire range of a condition. This is similarly illogical and inconsistent with the standard practice in medical taxonomy.

The authors then describe this **new definition** of whiplash (i.e., *sans* grades 3 and 4) as including symptoms of neck pain, headache, dizziness, disturbance of concentration or memory and visual disorders. They editorialize a bit by telling us that the average treatment duration for these patients (83.5 days) was too long, since soft tissue injuries heal in six weeks.

Do some whiplash injuries resolve within six weeks? Of course. Do all, or even most, of them resolve in six weeks? This is a common belief, and perhaps even true for soft tissue lesions other than whiplash, but there is no basis for it in the literature vis-à-vis whiplash injuries, except for perhaps one potentially flawed outcome study. The balance of outcome studies (i.e., numbering more than 55 at this time) report that a rather substantial number of these patients never fully recover. The smaller number of prospective studies (such as that of Radanov, et al.,⁴ who reported that 45 percent of their patients remained symptomatic even at 12 weeks) also fail to substantiate the six-week healing period claimed for whiplash. On the other hand, I would tend to agree with the authors that 83.5 days is a long average duration for treatment, assuming a mix of grade 1 and grade 2 patients only. This is likely a reflection of the treatment rendered: medication and cervical collar. Such treatment is not likely to be more effective in the long run than no treatment, and it is likely that many patients simply resign themselves to the eventuality that their injuries are permanent (at least under the treatment paradigm described) and discontinue care.

The authors note that in Japan, patients are compensated by insurance for lost wages and medical treatment, "a system which promotes the long-term treatment of patients" - another editorial comment offered without any support. Here again, aside from a couple of very flawed studies that superficially appeared to support this notion, there is little support for it. However, since the authors were working on insurance company databases, it is possible that they have a close working relationship with the company and share some of the industry's core beliefs and concerns. Apparently, some of these patients were admitted to the hospital, despite the fact that these were more or less uncomplicated CAD cases. The average admission was 115 days. The authors note that the Japanese people are fearful of long-term consequences and that they demand admission in order to secure their recovery for lost wages and medical care. This seems incomprehensible to us here in the West, where no hospital would admit a typical CAD victim for even an overnight stay unless there were some other more ominous complications.

The most important findings in this study are illustrated in Figures 1 and 2. When the authors break down the 400 cases on the basis of damage alone, we see that a not unsubstantial portion of them were injured in the grade 0 and grade 1 categories; an interesting fact in light of the prevalent misconception that injuries are unlikely when there is no property damage. In fact, were this theory to be true, we would expect few injuries in the first two categories and we would also expect a more or less linear relationship of increasing numbers of members in the greater severity groups (i.e., the slope of the line would be positive). Instead, we see negative slope. As damage increases, there are fewer members of the group. It could be argued that the correlation with risk here is tenuous and could be influenced by the commonness of crashes in the lower grades in Japanese traffic. However, the second graph shows quite clearly that treatment duration - which might be considered a proxy for injury severity - also fails to follow an additive linear pattern, which would be expected from the "no crash-no cash" theory. Thus, this study - despite the authors' questionable theories and perhaps forgivably reckless editorializing - is a profoundly important one because it offers very compelling evidence that the "no crash-no cash" notion cannot be supported.



That was just the latest evidence to disabuse the "no crash-no cash" myth. Want more? Check out the papers on our website (the download is free) or contact me at the e-mail address below. The most important thing to remember is that herd mentality is not an effective solution. You have to do something positive. Take an attorney to lunch; write a newsletter; put up a website; give a lecture. The best way to predict the future is to create it. Happy holidays.

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