The economic value of MicroPulse laser therapy for the comprehensive ophthalmologist

by David M. Dickman, MD

We are all very aware that an overall decrease in reimbursement rates is coinciding with an increase in capital expenditures for new technology. To make it more concrete, a comprehensive ophthalmologist could open a practice in 1989 with a $30,000 loan for equipment and expect to earn an average of $1,600 (adjusted to 2013 dollars for inflation) per case simply for being an assistant on cataract surgery.[1] Today, a single optical coherence tomography unit can cost $60,000, and the reimbursement rate for cataract surgery has dropped to $720. Finding treatment methodologies that make economic sense, as well as produce desired outcomes, is a must. I have found that MicroPulse laser therapy (Iridex, Mountain View, Calif.) fits the bill.

Changing paradigm

Laser therapy has been an accepted treatment for several decades for diseases as varied as diabetic macular edema, central serous retinopathy, and even glaucoma. While newer pharmacotherapy options have taken center stage for some of these diseases recently, increased knowledge about the mechanism of therapeutic action and the development of sublethal treatment modalities is increasing the popularity of laser treatments once again. Rather than coagulating tissue, controlled dosage of laser heats tissue just enough to elicit a stress response. This induces beneficial intracellular biological factors, such as PEDF, TSPI, SDFI, and beta-Actin, which are primarily anti-angiogenic and restorative.[2,3,4]

MicroPulse technology "chops" a continuous wave laser emission into a series of evenly spaced, repetitive laser pulses that improve control of the photothermal effects of treatment. A lower amount of energy is emitted with each pulse, and the pauses between pulses allow the tissue to cool. This treatment modality allows the tissue to remain viable and thus initiate a therapeutic stress response. MicroPulse laser trabeculoplasty (MLT) achieves equivalent clinical outcomes as continuous-wave laser modalities without causing clinically visible damage, intraoperative side effects or postop side effects.[5]

MLT savings to healthcare system

	Year 1	Year 2	Year 3	Year 4	Year 5
Prostaglandin therapy for MLT non-responders (23% non-responders for year 1 with ~7% annual growth)	$1,043/pp x 23 non-responders= $23,989	$1,043/pp x 30 non-responders =$31,290	$1,043/pp x 37 non-responders =$38,591	$1,043/pp x 44 non-responders =$45,892	$1,043/pp x 51 non-responders =$53,193
MLT monotherapy: 100 patients	$315 x 100 patients treated = $31,500	$0	$0	$0	$0
Total cost to treat with MLT and supplemental prostaglandin for MLT non-responders	$55,489	$31,290	$38,591	$45,892	$53,193
Prostaglandin monotherapy: 100 patients	$104,300	$104,300	$104,300	$104,300	$104,300
Annual savings of MLT	**$48,811**	**$73,010**	**$65,709**	**$58,408**	**$51,107**

Reducing costs

The Iridex IQ 532 laser system has both continuous-wave and MicroPulse mode options to treat many glaucoma and retinal disorders, but I will discuss just the economics of glaucoma here. While the cost of glaucoma medications for patients often makes the news, the price of medicating a glaucoma patient for the healthcare system is discussed less frequently. According to the Epocrates medical application, the yearly cost of prostaglandin medications ranges from $388 to $1,441, with an average cost for prostaglandins at $1,043/year.[6] The burden of payment is split between patient copays and insurance companies. Medicare reimbursement for trabeculoplasty by laser surgery (CPT code 65855) averages $315 for a single treatment. According to long-term argon laser trabeculoplasty studies, to which MLT has been found to be equally effective, the probability of success is 77% at 1 year and 49% at 5 years.[7]

Treating 100 glaucoma patients with MLT plus providing prostaglandin therapy for 1 year to the 23% of non-responders has a cost to the healthcare system of approximately $55,489. The cost of simply providing prostaglandin therapy to those same 100 patients for 1 year costs approximately $104,300, making a difference of $48,811 in the first year. However, the cost to the healthcare system in years 2–5 drops significantly, as prostaglandin therapy only has to be provided to the non-responders, a group that grows by about 7% annually. Prostaglandin therapy for 100 patients for 5 years costs a total of $521,500, compared to $224,455 for treating all 100 patients with MLT and then only providing pharmaceutical therapy to those who fail laser therapy.

Considering the significant portion of the population with glaucoma, a potential savings of greater than 50% in total cost to the healthcare system is of enormous proportions. In addition to providing the patient an effective treatment that saves money, the physician has an opportunity to earn a greater reimbursement.

Offering MLT as an option to pharmaceutical therapy

To all of my patients who do not have a contraindication to laser therapy, I present both the pharmaceutical and the laser surgery options to control their glaucoma. I inform them of the benefits and risks of each option. Laser is a treatment option that may prevent the need for hypotensive drops for a few years, but there is a 20% chance it will not be effective. Glaucoma medications are effective in a higher percentage of patients, but only when the patient uses them as directed. Medications may also cause side effects such as eye irritation, darkening of the skin around the eye or even a change of eye color. Patients who have low copays and feel they are compliant with medication regimens often choose to go that route. However, about 50% of my patients, either with high copays or a great distaste for daily drops, elect laser treatment.

A comprehensive approach

The purchase of equipment to perform selective laser trabeculoplasty requires a large capital expenditure, and it is a single-purpose laser. There are a variety of new, minimally invasive glaucoma procedures coming to market, but training to become proficient at new procedures can be very time-intensive, and some manufacturers require an initial investment or volume of patients that is not realistic for a comprehensive ophthalmologist.

Equipment that has multiple uses makes a lot of sense economically, and with the IQ 532 laser you can perform multiple procedures for retina disorders and glaucoma in both continuous-wave and MicroPulse modes. For a comprehensive ophthalmologist, it makes sense. **EW**

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Mission: Impossible

by Roger S. Balser

Is it really impossible to beat the market?

For much of the last 25 years, most of the media and investment management world has promoted the idea that individual investors can't beat the market. And it's true—you can't beat the market. That is, unless the stocks or mutual funds you own are, in fact, beating the market.

There is no way you could ever beat the market if the stocks or mutual funds you hold are not keeping pace with the market or, with any luck, staying ahead of the market.

However, that's what the majority of investors attempt to do. They would rather keep all of the "dogs" in their portfolio and even put it all on the long-shot dog to win. Can this strategy pay off? It can, but in reality it probably won't.

Perhaps you don't want to beat the market overall. You just want to own the best retail stocks, or the best gas and oil stocks, or the best commodities. But how could you know if your stocks or mutual funds are beating the market or are the best names to own in their respective sector?

As a long-standing player in this business, the best market indicator I've experienced is something called relative strength.

What is relative strength?

Relative strength is simply the measure of how your mutual fund or stock is performing when compared to a group of other stocks, funds, indexes, or the market overall.

According to Tom Dorsey of Dorsey Wright and Associates, relative strength is a comparison of price trend between one stock versus another stock or an index.

"I think of relative strength as an arm wrestling contest," Mr. Dorsey said. "Take two middleweights whose physical statistics stack up evenly. Viewing both individuals would not, in this example, suggest one was stronger than the other. That is until they arm wrestle. In this contest person A easily beats person B. If A and B were stocks, the result of this contest would suggest you buy A over B. Nothing says in the long term that B can't go out and get a gym membership and ultimately build more strength than A. The point is we can easily check the relative strength any second we wish by clicking the mouse of a computer that is programmed to do the simple calculation."

So perhaps you want to compare Apple with other tech stocks. Maybe you want to compare Microsoft with the S&P 500 Index. Maybe you want to compare your mutual fund against the Dow Jones Industrial Average or the Standard & Poor's 500 Index.

It's a very easy calculation. Simply divide the price of your stock or mutual fund against whatever yardstick you've chosen. Using the fraction you end up with, just slide the decimal over so you can work with whole numbers. Then begin plotting that result daily on a "point and figure" chart.

But be patient. These relative strength charts move pretty slow. Anything going up over time will be in a column of Xs. Anything going down will be in a column of Os. If you want to improve your odds of beating the market, the index (or whatever benchmark you choose), must be in a column of Xs and preferably be producing "Buy" signals.

Why is this? If your stock or mutual fund is climbing in a column of Xs against the market (or a group of its peers), it has to be outperforming the benchmark. It can't go higher unless it's going up faster than the market overall.

If your stock or mutual fund is going down against the benchmark you're using, it means your stock or mutual fund has poor relative strength compared to the index that you're charting it against.

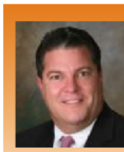
Poor relative strength is something to steer clear of.

When the market starts going down and things look cloudy, stocks and mutual funds with poor relative strength (or on a relative strength "Sell" signal) will more often than not fall further and more rapidly than the rest of the market.

Stocks with a relative strength "Buy" signal can also go down with the market. However, my experience has shown that stocks with positive relative strength or on relative strength "Buy" signals typically don't decline as much as the market overall. When the market recovers they're the first to bounce as the market picks up.

In summary, relative strength can help you improve performance, preserve capital, and eliminate the pain, frustration, and emotion of investing. Choose to ignore it at your own risk. **EW**

About the author



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