## Suggestions for sustainable medical shockwave treatment

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In order for any treatment to be continuously performed and developed, it must be paid a reasonable price for its value. Shockwave treatment is more expensive than other physical treatments because it uses relatively expensive equipment, requires one dedicated therapist per patient, and requires a separate and independent treatment space due to problems such as patient's exposure and noise of the affected area. Therefore, the cost of treatment is also a burden for many patients who need help with shockwave treatment.

Because shockwave treatment is very effective but relatively expensive, it is naturally shifting to being covered by insurance, and public insurance is already being applied in some countries. As a result, there were conditions that insurance companies required to pay insurance money, and doctors doing shockwave treatment were not enough to prove that their treatment was not only effective, but also appropriate and justified.

In general, the conditions required by insurance companies for insurance payment are as follows. The 'objective' evidence that the patient's disease is an proper indication of shockwave treatment, and the results of the 'objective' examination that observed the progress of the disease's improvement through shockwave treatment. In some cases, objective test results observing the progress of treatment can be secured clearly through imaging study, such as bone fracture, soft tissue rupture, calcification, tendinopathy, etc. However, 'the pain' patients complain of is unfortunately still very difficult to objectively confirm the degree even with modern medicine, and sometimes

it is also very difficult to objectively prove even the presence or absence of that pain. The pain VAS scoring system, which is currently widely used in the area of pain treatment, is also a subjective system that inevitably has a lot of biases depending on patients as well as examiners, and is far from an objective examination.

But I think we already have a good answer to this problem. We can objectify and evaluate these problems in more detail, using the 'biofeedback' phenomenon that can be seen during shockwave treatment. If you have some experience directly performed shockwave treatment on a patient, I'm sure you all know that the more severe the disease and the closer to the core lesion, the more severe pain the patient complains of, through your experience."

Therefore I'd like to suggest, the ISMST should make it public sense world-widely that shockwave treatment is a good means to prove the presence of the disease, find accurate lesion, and evaluate the severity of the disease objectively, and that performable energy intensity of shockwave treatment can be a very objective test tool that can be quantified, 'as a number'.

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