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## Lethal injection creator: Maybe it's time to change formula

- Lethal injection, created in late 1970s in Oklahoma, has been widely adopted
- Doctor who devised the method says drug formula may need updating
- Newer drugs might be more effective, doctor says

By Elizabeth Cohen  
CNN

**ATLANTA, Georgia** (CNN) -- When Gary Gilmore was choosing between the firing squad and the electric chair in 1977, Dr. Jay Chapman remembers discussing the inhumanity of each option with his colleagues at the Oklahoma state medical examiner's office.

"We said this is really ridiculous. We kill animals more humanely than we kill people," said Chapman.

But Chapman, then the chief medical examiner in Oklahoma, supported the death penalty. So when state legislators asked him to come up with a more humane alternative, he went to work.

For three weeks Dr. Chapman contemplated the best way to kill someone, the best combination of drugs that when injected, would take life swiftly and painlessly.

He came up with a lethal three-drug cocktail, and to his great surprise, over the past 25 years, 37 states adopted it nearly to the letter. But now, after concerns that instead of causing an instant death it sometimes provides a slow, painful, one, Chapman has rethought whether his formula is optimal.

"It may be time to change it," Chapman said in a recent interview. "There are many problems that can arise ... given the concerns people are raising with the protocol it should be re-examined."

A recent study found sometimes inmates given lethal injections slowly suffocate while conscious but unable to communicate. Judges have ruled the procedure unconstitutional in two states, and 11 states have stopped using lethal injection.

One problem was illustrated last year when it took nearly 90 minutes to execute Joseph Clark, who'd murdered two people in Ohio. Witnesses reported that Clark raised his head off the gurney and said repeatedly, "don't work, don't work," and moaned and groaned as he struggled with prison officials.

News accounts of the execution also quoted Clark as asking, "Can you just give me something by mouth to end this?"

Chapman's protocol involves using an anesthetic to render the inmate unconscious; a paralytic to stop the inmate's breathing; and a drug to stop the heart.

One criticism has been that the anesthetic, sodium thiopental, doesn't completely anesthetize all inmates.

"Now there are other agents that work much faster and much easier," Chapman said, specifically pointing out an anesthetic called Diprivan. "Absolutely [Diprivan] would be better [for an execution]. If you're wanting to give someone something so there's no sensation, no awareness of what's going on, that's the drug."

The other major criticism of the lethal injection method has been that if the prisoner isn't completely unconscious, he will feel the asphyxiation caused by the second drug, pancuronium bromide, which paralyzes all muscles, including those needed to breathe.

When asked why he included the asphyxiation drug in his formula, Chapman answered, "It's a good question. If I were doing it now, I would probably eliminate it."

He added he wouldn't change the third drug, potassium chloride, which is highly effective at stopping the heart and causing cardiac arrest.

Chapman still stands by his formula as a sound -- if not perfect -- method of execution. "It works if it's administered competently," he said. "But you have to have some skills to do it. You have to have the ability to find a vein and mix the drugs, because [some of them] come as a powder."

He added that he's heard reports that in one execution, the IV needle was inserted incorrectly, pointing toward the prisoner's hand rather than his body. "You have to be an idiot to do that," said Chapman, who's a forensic pathologist.

He also criticized prison officials for inserting the IV inside the death chamber rather than beforehand. "It seems ridiculous to me to be trying to find a vein when everyone's inside the chamber, feeling nervous and fiddling around trying to find the vein," he said. "That's just ludicrous to me."

He also cited another "incompetency:" the execution of Angel Nieves Diaz last year that took 34 minutes because IV needles were inserted straight through his veins and into the flesh in his arms. Then-Florida Gov. Jeb Bush subsequently suspended all executions.

Even proponents of the death penalty say they have doubts about whether the three-drug formula is the best way to execute someone. "I think it's a dumb way to do it," said Michael Rushford, president of the Criminal Justice Legal Foundation, a group that advocates the death penalty. "It's a complicated procedure, and open to criticism."

Instead, Rushford said he supports using carbon monoxide, which he described as being "simple, fast, and painless."

Chapman disagreed with that assessment. But he had another idea. "The simplest thing I know of is the guillotine. And I'm not at all opposed to bringing it back. The person's head is cut off and that's the end of it."

Elizabeth Cohen is a CNN Medical News correspondent. Senior producer Jennifer Pifer and associate producer Sabriya Rice contributed to this report.

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