Researchers find new ways to administer drops

Pippa Wysong in Fort Lauderdale

WHILE new data supports what many ophthalmologists already suspect - that glaucoma patients either have trouble putting drops in their eyes or are not compliant - researchers are working on ways to help patients get medication into their eyes using novel delivery devices.

The problems of using drops, and possible new delivery devices, were presented at the annual meeting of ARVO.

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Canadian researchers did a study that illustrated some of the problems with drop administration. The study revealed that even among patients who are compliant, many administer their drops in ways that are dangerous to their eyes, with more than half of patients letting the tip of the eye drop bottle touch their eye. This mode of application contaminates the tip of the bottle and puts patients at risk for infection, said Robert Campbell, MD, a glaucoma fellow at the University of Toronto and assistant professor of Medicine at Queen’s University in Kingston, Ontario.

"People are pretty good at getting the drop in if they decide to use it. They don't miss very often... but more than half of them get it in there by shoving the bottle tip right into their eye, contaminating the tip and potentially traumatizing the eye," he told EuroTimes in an interview.

He presented details of a study that investigated compliance among 166 glaucoma patients and observations of how they administered drops. Patients were given a bottle of artificial tears and asked to administer them using their normal technique. Observers assessed the techniques using a standard scoring system. Patients were also asked to answer questions to determine compliance.

Patients need guidance

Findings show that only 3.5% of subjects missed their eye completely when trying to put drops in. Just over half, 52%, contaminated the bottle tip during drop administration. Only 24% of all the patients reported that they had been shown in the past by their pharmacist, how to put drops in. However, previous coaching did not predict which patients would correctly administration drops.

"It reinforces that it's up to us as physicians to take the time to show people how to use drops and watch them to make sure they are using them properly," Dr Campbell said.

He acknowledged that it is not practical for ophthalmologists to coach every patient, but suggested that physicians review technique with certain patients, especially if their pressures are not responding as one would expect.

His research found that 30% of patients were non-compliant. Dr Campbell noted that clinical and demographic factors did not predict compliance. Published studies show compliance ranges from five per cent to 80%. Compliance among glaucoma patients "seems quite practice specific," Dr Campbell said.

Lower eyelid pouch

He suggested a technique of drop administration that might help - advising patients to use one hand to pull the lower eyelid out to create a small pouch.

"It is a fundamental change in the way drops are being delivered. Instead of a vertical drop... now what you have is a horizontal delivery and a forced flow," he said.

Novel delivery device

Other research suggests that shooting drops in from the front of the eye might be the way to go. Charles Bosworth PhD, associate director in ophthalmology at Pfizer presented details of a novel delivery device that applies drops to the eye horizontally.

"It is a fundamental change in the way drops are being delivered. Instead of a vertical drop... now what you have is a horizontal delivery and a forced flow," he told EuroTimes.

Regular eye drop bottles are inserted into the device to help with delivery. Patients put an eyecup, which is part of the device, to their eye and press a button to have a single dose delivered.

Eighty-nine patients with either glaucoma or ocular hypertension were enrolled into a crossover study to compare use of the horizontal delivery device to a traditional dropper bottle. They used the devices on different days, at different visits to the clinic using non-medicated drops. At each visit, patients used the dropper devices four times at 30-minute intervals. When using the conventional dropper, patients were asked to apply drops in their usual manner. Physicians assessed eye drop delivery for both devices.

Patients used the horizontal delivery device fairly well at the first try, but by the time they administered their fourth drop they were 1.4 times more likely to administer a single drop successfully than with the traditional dropper.

Patients reported that they preferred the new device, Dr Bosworth said.

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Glaucoma