

Use of Memory Games Shows Gains at 6 Months

BY ROXANNA
GUILFORD-BLAKE

SAVANNAH, GA — Regular use of a brain fitness program appears to produce slight memory improvements in elderly participants at 2 months and significant gains at 6 months, compared with an active control group.

Extended exposure is correlated with enhanced visual and verbal memory in the elderly, Karen Miller, Ph.D., of the University of California, Los Angeles, reported at the annual meeting of the American Association for Geriatric Psychiatry.

The program, Dakim BrainFitness, uses games to exercise long- and short-term memory, critical thinking, visuo-spatial skills, calculation, and language. Dakim sponsored the research, and Dr. Miller serves as a consultant.

The trial included 38 elderly subjects, 22 in the intervention group (average age, 82.4 years), and 16 in the control group (average age, 83.1 years). The program offers 300-400 activities and five levels of difficulty, allowing participants to engage in different activities each session. Although the program is computer-based, it is designed to be used by those with no computer experience.

Patients with Alzheimer's disease were



Participants who regularly used a touch-screen program had significant improvements on verbal and visual memory scores compared with a control group.

excluded; those with mild cognitive impairment and age-consistent memory impairment were not.

Significant differences were observed at 6 months after randomization between the intervention group, which was enrolled in the program for the duration of the study (an average of 93.3 sessions per participant) and the control

group, which, after a 2-month testing phase, also was enrolled (for an average of 45.2 sessions).

Neuropsychological testing was conducted at baseline, at 2 months, and at 6 months. After 2 months, preliminary analysis of intervention group subjects revealed better delayed recall for list learning. The intervention group improved by recalling 8.3 words, compared with their initial recall of 7.6 words during baseline testing.

The control group's recall declined to on average 5.3 words during the posttesting period from the initial recall of 6.8 words.

At 6 months, participants in the intervention vs. control groups were significantly different in their delayed memory domain score. In the intervention group, which had played for the full 6 months, scores rose from 10.4 at baseline to 12.1.

In the control group, which played from month 2 to month 6, the same memory scores fell slightly, from 10.2 at baseline to 10.1 at follow-up.

The key finding, Dr. Miller said, is the importance of exposure. The longer a person uses the program, the more likely he or she is to improve in verbal and visual memory. The results at 2 months were "mild," while those at 6 months were "most overwhelmingly positive."

She added that 2- and 6-month analyses of a larger study of 100 subjects, which will include data on perception of memory functioning and mood, should be available by the summer. If she secures additional funding, she plans to do a follow-up at years 1 and 5.

Numerous brain fitness products are on the market, and that prompted a question from the audience about how to separate the legitimate programs from the "Elmer Gantries." Another session panelist, Dr. Gary Small also of the University of California, Los Angeles, fielded the question and suggested that the program should be viewed with the same kind of skepticism that should be taken toward nutritional supplements. "We need more evidence before we get all excited about it," he said.

Dr. Small is a Dakim shareholder. ■

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INDICATIONS AND USAGE

PATADAY™ solution is indicated for the treatment of ocular itching associated with allergic conjunctivitis.

CONTRAINDICATIONS

Hypersensitivity to any components of this product.

WARNINGS

For topical ocular use only. Not for injection or oral use.

PRECAUTIONS

Information for Patients

As with any eye drop, to prevent contaminating the dropper tip and solution, care should be taken not to touch the eyelids or surrounding areas with the dropper tip of the bottle. Keep bottle tightly closed when not in use. Patients should be advised not to wear a contact lens if their eye is red.

PATADAY™ (olopatadine hydrochloride ophthalmic solution) 0.2% should not be used to treat contact lens related irritation. The preservative in PATADAY™ solution, benzalkonium chloride, may be absorbed by soft contact lenses. Patients who wear soft contact lenses and whose eyes are not red, should be instructed to wait at least ten minutes after instilling PATADAY™ (olopatadine hydrochloride ophthalmic solution) 0.2% before they insert their contact lenses.

Carcinogenesis, Mutagenesis, Impairment of Fertility

Olopatadine administered orally was not carcinogenic in mice and rats in doses up to 500 mg/kg/day and 200 mg/kg/day, respectively. Based on a 40 µL drop size and a 50 kg person, these doses were approximately 150,000 and 50,000 times higher than the maximum recommended ocular human dose (MROHD). No mutagenic potential was observed when olopatadine was tested in an *in vitro* bacterial reverse mutation (Ames) test, an *in vitro* mammalian chromosome aberration assay or an *in vivo* mouse micronucleus test. Olopatadine administered to male and female rats at oral doses of approximately 100,000 times MROHD level resulted in a slight decrease in the fertility index and reduced implantation rate; no effects on reproductive function were observed at doses of approximately 15,000 times the MROHD level.

Pregnancy:

Teratogenic effects: Pregnancy Category C

Olopatadine was found not to be teratogenic in rats and rabbits. However, rats treated at 600 mg/kg/day, or 150,000 times the MROHD and rabbits treated at 400 mg/kg/day, or approximately 100,000 times the MROHD, during organogenesis showed a decrease in live fetuses. In addition, rats treated with 600 mg/kg/day of olopatadine during organogenesis showed a decrease in fetal weight. Further, rats treated with 600 mg/kg/day of olopatadine during late gestation through the lactation period showed a decrease in neonatal survival and body weight. There are, however, no adequate and well-controlled studies in pregnant women. Because animal studies are not always predictive of human responses, this drug should be used in pregnant women only if the potential benefit to the mother justifies the potential risk to the embryo or fetus.

Nursing Mothers:

Olopatadine has been identified in the milk of nursing rats following oral administration. It is not known whether topical ocular administration could result in sufficient systemic absorption to produce detectable quantities in the human breast milk. Nevertheless, caution should be exercised when PATADAY™ (olopatadine hydrochloride ophthalmic solution) 0.2% is administered to a nursing mother.

Pediatric Use:

Safety and effectiveness in pediatric patients below the age of 3 years have not been established.

Geriatric Use:

No overall differences in safety and effectiveness have been observed between elderly and younger patients.

ADVERSE REACTIONS

Symptoms similar to cold syndrome and pharyngitis were reported at an incidence of approximately 10%.

The following adverse experiences have been reported in 5% or less of patients:

Ocular: blurred vision, burning or stinging, conjunctivitis, dry eye, foreign body sensation, hyperemia, hypersensitivity, keratitis, lid edema, pain and ocular pruritus.

Non-ocular: asthenia, back pain, flu syndrome, headache, increased cough, infection, nausea, rhinitis, sinusitis and taste perversion. Some of these events were similar to the underlying disease being studied.

DOSAGE AND ADMINISTRATION

The recommended dose is one drop in each affected eye once a day.

HOW SUPPLIED

PATADAY™ (olopatadine hydrochloride ophthalmic solution) 0.2% is supplied in a white, oval, low density polyethylene DROP-TAINER® dispenser with a natural low density polyethylene dispensing plug and a white polypropylene cap. Tamper evidence is provided with a shrink band around the closure and neck area of the package.

NDC 0065-0272-25

2.5 mL fill in 4 mL oval bottle

Storage:

Store at 2°C to 25°C (36°F to 77°F)
U.S. Patents Nos. 4,871,865; 4,923,892; 5,116,863; 5,641,805; 6,995,186

Rx Only

References:

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Extended-Release Memantine Deemed Safe, Well Tolerated

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GUILFORD-BLAKE

SAVANNAH, GA. — An extended-release formulation of memantine 28 mg applied once daily was safe and well-tolerated in patients with moderate to severe Alzheimer's disease who participated in a 52-week, open-label, fixed-dose study.

Dr. Barnett Meyers of Weill Medical College at Cornell University, White Plains, N.Y., and his colleagues presented the study, which was funded by Forest Laboratories, at the annual meeting of the American Association for Geriatric Psychiatry.

Memantine (Namenda) has been approved for the treatment of moderate to severe Alzheimer's disease (AD). It's currently administered in twice-daily, immediate-release doses of 10 mg each.

A previous 24-week trial indicated that a once-daily 28-mg formulation of memantine (memantine ER) was safe and effective for patients with moderate to severe AD who were taking cholinesterase inhibitors (Alzheimers Dement. 2008;4[Suppl. 1]:T793).

Of 253 outpatients who were screened, 164 were either titrated to the target dose of memantine ER 28 mg daily over 4 weeks (75 of the 128 patients in this group completed the trial) or were switched from twice daily, immediate-release memantine 10 mg (23 of 36 patients completed the trial). All patients were 50 years or older, with similar baseline characteristics and a diagnosis of probable AD.

Of 150 patients who reported treatment-emergent adverse events, 8 (5%) experienced events that were determined to be related to the study medication.

Overall, 44 patients (27%) experienced a serious adverse event, and none of the 12 deaths that occurred during the trial was determined to be related to treatment.

During treatment, 18% of patients gained weight, 13% lost weight, and 10% had high blood urea nitrogen, Dr. Meyers and his colleagues reported in their poster.

The researchers concluded that patients taking the 10-mg twice-daily dose can safely switch to memantine ER without a titration period. ■