



The Impact of Age-Related Macular Degeneration Treatments on Patient Falls and Mobility: A Systematic Review

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Age-Related Macular Degeneration (AMD)



FALLS

- Costs U.S. healthcare system ⇒ \$50 billion/year
- Linked to poorer overall functioning, earlier admission to long-term care facilities

Interventions for AMD:

- Intraocular anti-vascular endothelial growth factor agents (anti-VEGF)
- Laser therapy
- Photodynamic therapy
- Oral antioxidants



AMD

- Leading cause of blindness in developed countries
- Aging population: ↑ life expectancy = ↑ prevalence of geriatric eye conditions

***Major public health problems! Let's take a public health lens:**

What is the impact of age-related macular degeneration treatments on patient mobility and falls?

Systematic Review Methods

Inclusion:

- Primary, original studies (clinical trials/observational)

Exclusion:

- Review articles, editorials, commentaries, and articles with abstracts and titles not in English.
- No specified date range

Databases:

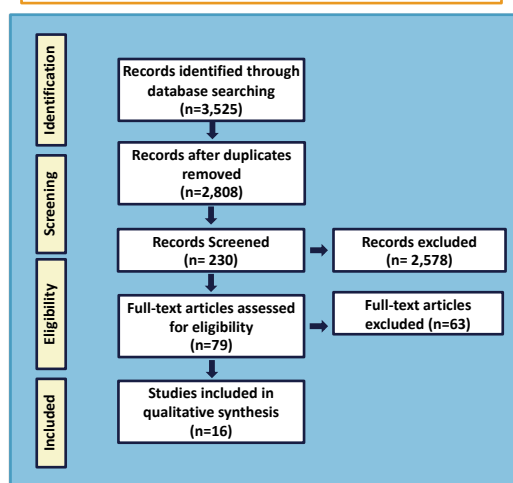
Scopus   

Comprehensive Search Strategy:

- Two reviewers completed the search independently. Inclusion discrepancies adjudicated by a third author.

Problem	Intervention	Outcome of interest
36 variations	43 variations	21 variations

Selection Process



Problem	Outcome
Macula-	Fall
Maculo-	Mobility
AMD	Gait
ARMD	Stability
Neovascularization	Hip fracture
	Balance
	Injury
	Physical

Data Extraction:

- Patient demographics, study design, methods, and relevant findings

*Citations furnished upon request

Preliminary Findings

Falls/mobility as..

- Primary outcome(s)- 2
- Secondary outcome(s)- 11
- Listed as anecdotal adverse event- 3

Types of studies:

- Randomized control trials- 8
- Non-randomized control trials- 2
- Cross-sectional studies- 4
- Prospective case series- 1
- Prospective cohort- 1

How outcomes assessed:

- Quality of life questionnaires (5)
- Physical Functioning questionnaires (4)
- In-Person tests (3)
- Falls reporting (2)

Highlights from Three Sample Studies:

Treatment improvement in mobility/fall rate:

In RCT of vitamin A vs. placebo in AMD patients- After 30 days, the vitamin A group had a ↑ score by 5 points on the mobility subscale compared to placebo when controlling for confounders (P = 0.0224)

No treatment improvement in mobility/fall rate:

No clinically significant difference in mobility outcomes on quality of life scale between bevacizumab and ranibizumab and continuous vs. discontinuous treatment regimens (p = 0.74 & p = 0.73) (anti-VEGF injections)

Mobility = not significantly associated with the subjective gain of vision clarity by photodynamic therapy after correction for confounders (p=0.53)

Discussion

- Heterogeneous study designs, methods, and findings- difficult to compare studies
- Need standardized measurement tool(s) for assessing mobility and patient falls
- Ophthalmology= needs a broader focus of outcomes
 - Patient-centered vs. organ-centered
 - Public health lens

Future Directions

