Assessment of Treatment Masking: The Reducing Adenoviral Patient Infected Days (RAPID) Study

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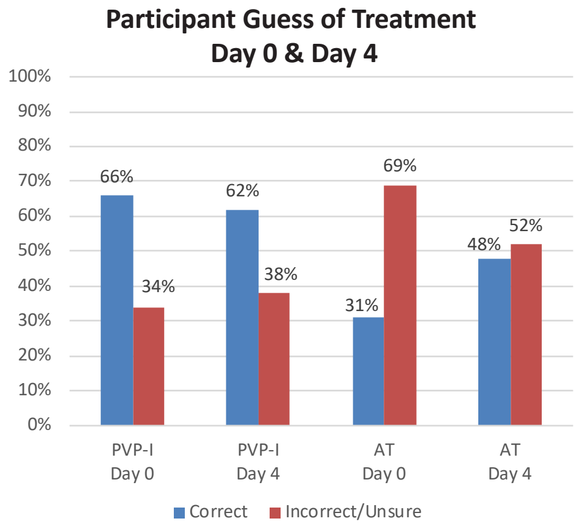
Purpose

- The Reducing Adenoviral Patient Infected Days (RAPID) study is a multi-center, double-masked randomized pilot trial of the safety and efficacy of a one-time administration of ophthalmic 5% Povidone-Iodine (PVP-I) treatment.
- Efficacy was assessed with viral load measured by quantitative PCR, patient-reported symptoms and clinician assessment of signs.
- Patients and clinicians could become unmasked due to the yellow color and potential stinging and burning associated with ophthalmic 5% PVP-I. Unmasking could cause bias in patient-reported symptoms and clinician assessment of signs.
- We report on the success of masking in the RAPID study.

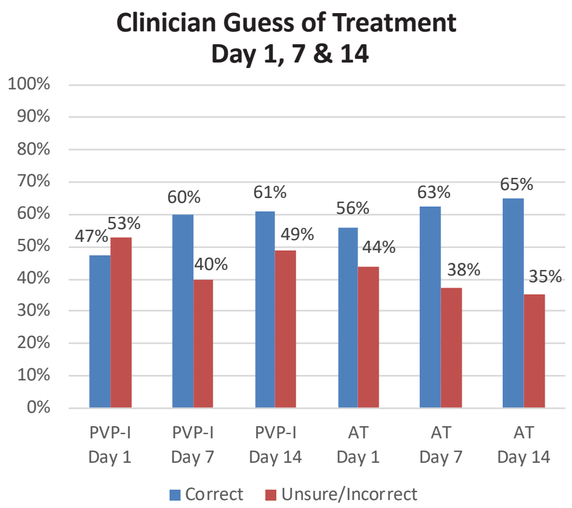
Methods

- Adults (≥ 18 years old) presenting with a red eye for ≤ 4 days and a positive point of care immunoassay test for adenovirus were enrolled.
- Participants were randomized to receive a one-time instillation of 4-5 drops of PVP-I or artificial tears (ATs) post-instillation of 1 drop of proparacaine 0.5%.
- Two minutes after administration, the ocular surface and eyelids were lavaged with a sterile saline irrigation solution.
- All follow-up visits were conducted by clinicians masked to randomization.
- At day 0 (immediately post-lavage) and at day 4, participants were asked to guess whether they received PVP-I, ATs, or were unsure. Masked clinicians were asked the same question at follow-up days 1, 7 and 14.
- The Bang index (BI) of masking, which quantifies success in masking was calculated.

Results



The overall correct guess rate 49% (27/55) on Day 0 & 55% (23/42) on Day 4



The overall correct guess rate was 51% (18/35) on Day 1 & 63% (22/25) on Day 14

*Bang Index (BI) is an index of the success of masking beyond random guessing.

- BI Ranges from -1 to 1
- All guesses correct, BI = 1
- All guesses incorrect, BI = −1
- 50% correct guesses, then BI=0

+ In this study, 'unsure' guesses were grouped with incorrect.

Masked Participant Guesses: Bang Index

	Day 0 Immed. post-lavage	Day 4 (± 1)
Correct Guess: Povidone Iodine (PVP-I)	BI = 0.31 (p=0.04)	BI = 0.24 (p=0.13)
Correct Guess: Artificial Tears (AT)	BI⁺ = -0.38 (p = 0.98)	BI⁺ = -0.05 (p=0.58)

Masked Clinician Guesses: Bang Index

	Day 1 (± 1)	Day 7 (± 1)	Day 14 (± 3)
Correct Guess: Povidone Iodine	BI = -0.05 (p=0.59)	BI = 0.2 (p=0.21)	BI = 0.2 (p=0.61)
Correct Guess: Artificial Tears	BI⁺ = 0.125 (p=0.31)	BI⁺ = 0.25 (p=0.15)	BI⁺ = 0.3 (p=0.10)

Conclusions

- Despite the known ocular discoloration and potential irritation with PVP-I, masking of both participants and clinicians in this double-masked trial was fair in both the 5% PVP-I and artificial tear treatment groups.
- Although most participants receiving the PVP-I treatment correctly identified being in the treatment group, most people receiving ATs were unsure or incorrect in guessing treatment, and overall correct guess-rate for the study was nearly 50%.
- The success of masking indicates that participant and clinician reported outcomes were likely not substantially biased due to treatment unmasking.
- Assessment of masking is rarely reported in ophthalmic studies. We recommend the assessment and reporting of masking success in clinical trials utilizing subjective outcomes.

References

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•Clinical Trial Registration: https:/ clinicaltrials.gov/ct2/ show/NCT0247222

Contact

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