



MILAN



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Role Of Dna Methylation In Persistent Diabetic Macular Edema (IPL/2021/DiffMeDiME_ESTeSL)

Pedro Camacho* ^{1,2,3}, Bruno Pereira^{1,3}, Edna Ribeiro¹, Teresa Varandas^{3,4}, José Henriques⁵, João Nascimento⁵, Marco Dutra-Medeiros^{3,5,6}, Carina Silva¹, Mariana Delgadinho^{1,6}, Ketlyn Oliveira¹, Miguel Brito¹

¹Health and Technology Research Center, ²Ophthalmology Institute Dr. Gama Pinto, Lisbon, ³Nova Medical School, Lisbon, ⁴APDP – Diabetes Portugal. Lisbon, ⁵Retina Institute of Lisbon, Lisbon, ⁶Central Lisbon Hospital Center, Lisbon, Lisbon, Portugal

Disclosure for Pedro Camacho

In compliance with COI policy, ESCRS requires the following disclosures to the session audience:

Shareholder	No relevant conflicts of interest to declare.
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Consultant	No relevant conflicts of interest to declare.
Employee	No relevant conflicts of interest to declare.
Paid Instructor	No relevant conflicts of interest to declare.
Speaker Bureau	No relevant conflicts of interest to declare.
Other	No relevant conflicts of interest to declare.

Presentation includes discussion of the following off-label use of a drug or medical device: No



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BACKGROUND

- a) Disease Duration and metabolic control are insufficient to understand Diabetic Macular Edema (DME), the leading cause of vision loss in people with diabetes.
- b) 30-40% cases of DME do not respond optimally to AVEGF (loading phase)
- c) Poor genetic association in DR development (<25% RD) and PDR progression (25-50%)

PURPOSE

To study the role of DNA methyltransferase expression (DNMT1, DNMT3a, DNMT3b) in persistent diabetic macular edema.

Randomized Controlled Trial | Am J Ophthalmol. 2018 Nov;195:93-100.
doi: 10.1016/j.ajo.2018.07.030. Epub 2018 Aug 2.

Early Response to Anti-Vascular Endothelial Growth Factor and Two-Year Outcomes Among Eyes With Diabetic Macular Edema in Protocol T

Neil M Bressler¹, Wesley T Braxley², Maureen G Maguire³, Adam R Glassman⁴, Kevin J Binder⁵, Susan B Bressler⁶, Victor H Gonzalez⁷, Leo M Jampol⁸, Michele Melia⁹, Jennifer K Sun⁸, John A Wells 3rd⁸, Diabetic Retinopathy Clinical Research Network

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REVIEW

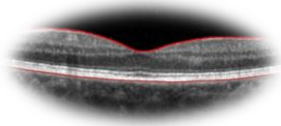
Update on genetics and diabetic retinopathy



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METHODS

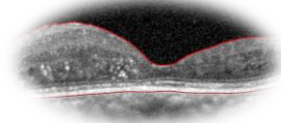
Control Group (G1)



No DR

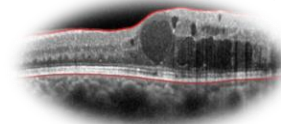
- Classification of DR, histological and vascular assessment (clinical information, CF, FAF, SD-OCT, OCT-A)
- Blood sampling: DNA methylation (PCR)

Responder DME group (G2)



↓ thickness >10% and BCVA response ≥ 5 letters.

Persistent DME group (G3)



thickness/improvement <10% and BCVA < 5 letters.

RESULTS

A total of 27 eyes from 27 patients (55% women) aged 59–91 years were divided according to the DR presence/absence and DME therapeutic response: Control Group (n= 11), responder DME (n=9) and persistent DME (n=7).

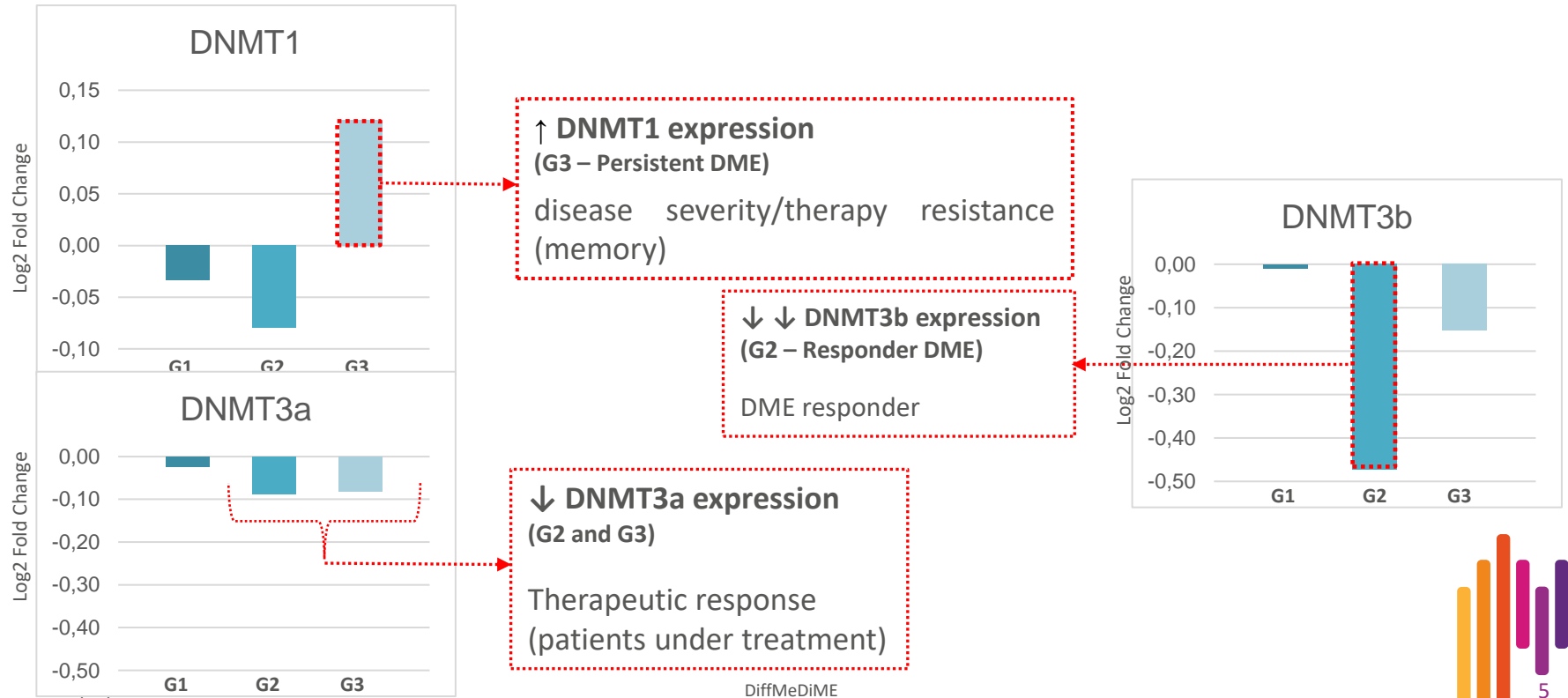
No significant differences were found concerning Sex ($p=0.175$), Diabetes Duration ($p=0.575$) and Body mass index ($p=0.086$).

BCVA ($p<0.001$), central foveal thickness ($p=0.001$) and hemoglobin A1C ($p=0.003$) showed significant differences across all groups.



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RESULTS/DISCUSSION



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CONCLUSION

Differences in the DNMTs expression consistent with (1) DME severity and (2) Treatment response

Patients with similar metabolic control and duration of disease showed DNMTs expression differences

This epigenetic approach could help to characterize patients with more favorable therapeutic response and help for new therapeutic approaches (inhibitors of DNMTs)

FUTURE DIRECTIONS...

DNMTs expression differences

- (1) reflect disease evolution?
- (2) translate the therapeutic impact?
- (3) can help to predict the therapeutic resistance profile?

