

METAHEMOGLOBINEMIA ASSOCIADA AO USO DE DAPSONA

Arthur Claret Santos

Larissa Toledo Souza

Claudia Kohn

Egon Luiz Daxbacher

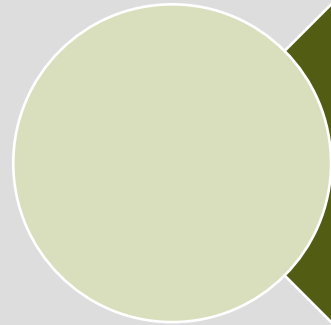
Clarissa Vita Campos

Rilza Beatriz Azeredo Coutinho

♂, 22 anos,
Sem
comorbidades

Foliculite
eosinofílica

Tacrolimus 0,1%
pomada



Falha terapêutica



Atividade normal
de G6PD

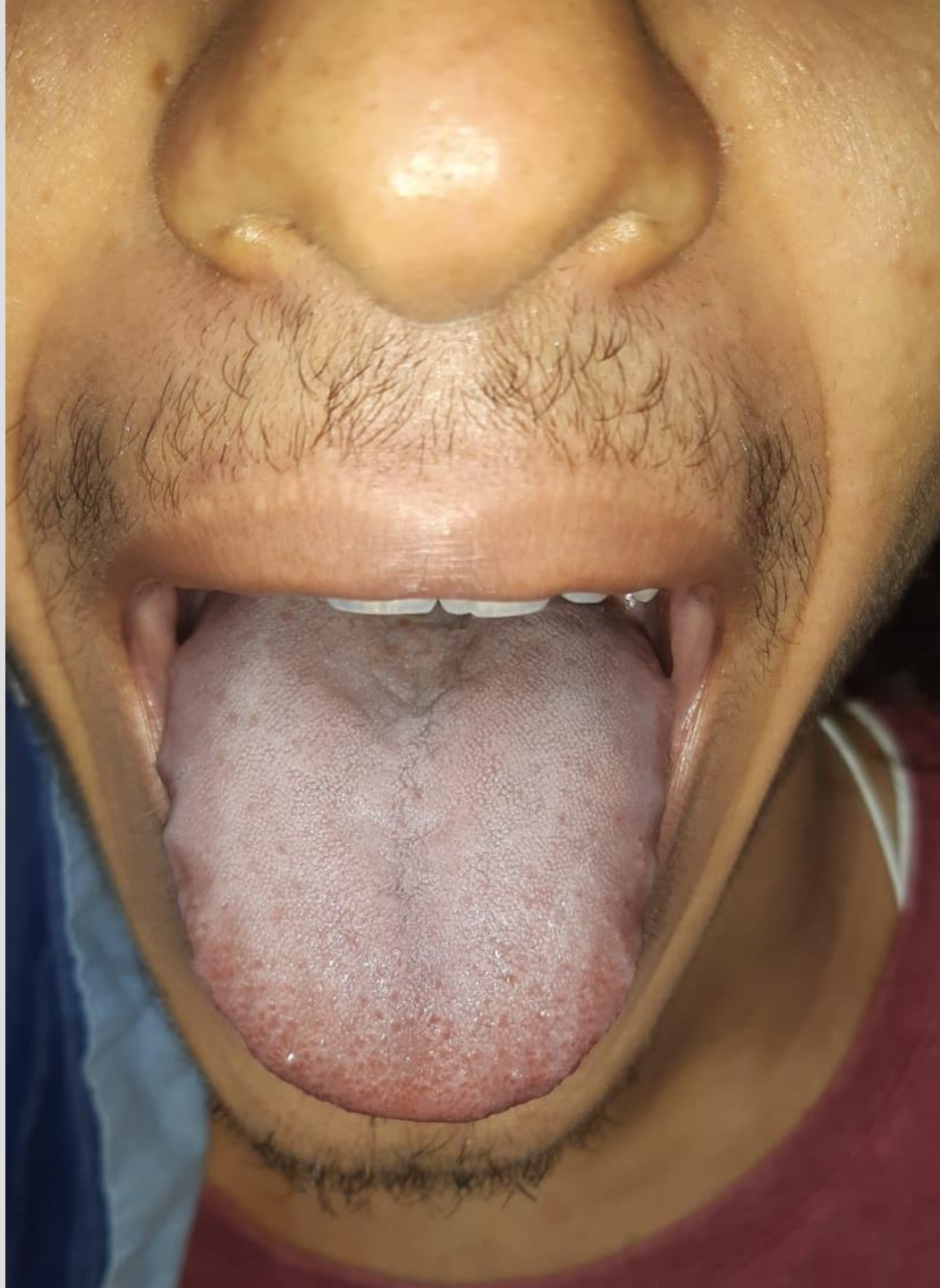


Dapsona 50mg/dia



Samsung Dual Camera
RbgacDermato





EXAME FÍSICO

Bom estado geral

Eupneico

Normocárdico

SatO₂ 93%

CONDUTA



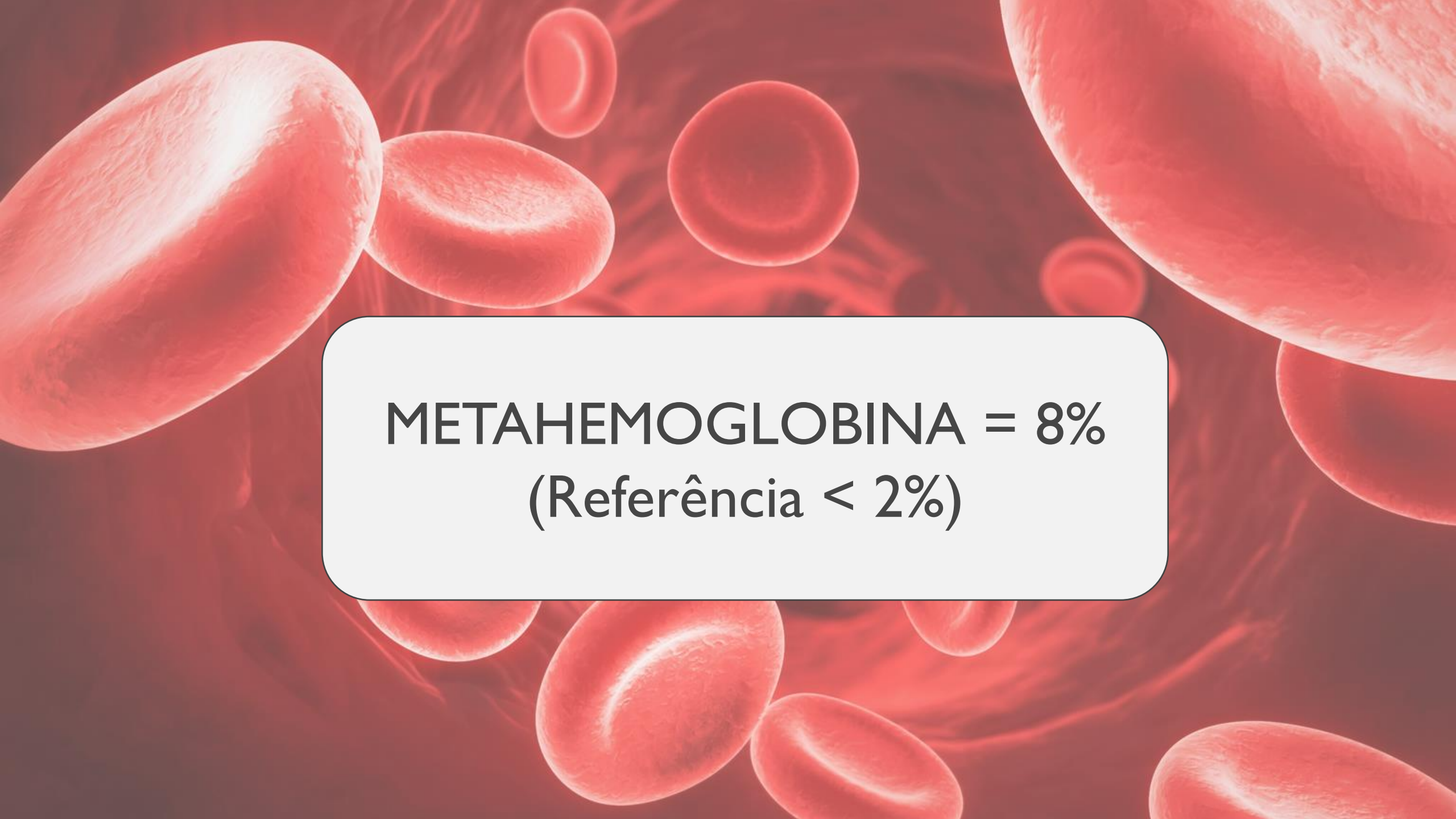
Suspensão
imediata da
Dapsona



Orientações
sobre Serviço
de Emergência
se piora



Exames
laboratoriais

The background of the slide features a detailed illustration of several red blood cells. These cells are depicted as biconcave discs, with a lighter red center and a darker red outer rim, giving them a three-dimensional appearance. They are scattered across the frame, with some in sharp focus and others blurred in the background, creating a sense of depth. The overall color palette is a range of reds, from deep maroon to bright, almost white highlights on the cells' surfaces.

METAHEMOGLOBINA = 8%
(Referência < 2%)

METAHEMOGLOBINEMIA

- Condição em que há uma formação excessiva da metahemoglobina ($> 2\%$)
- Causas:
 - Hereditária
 - Adquirida

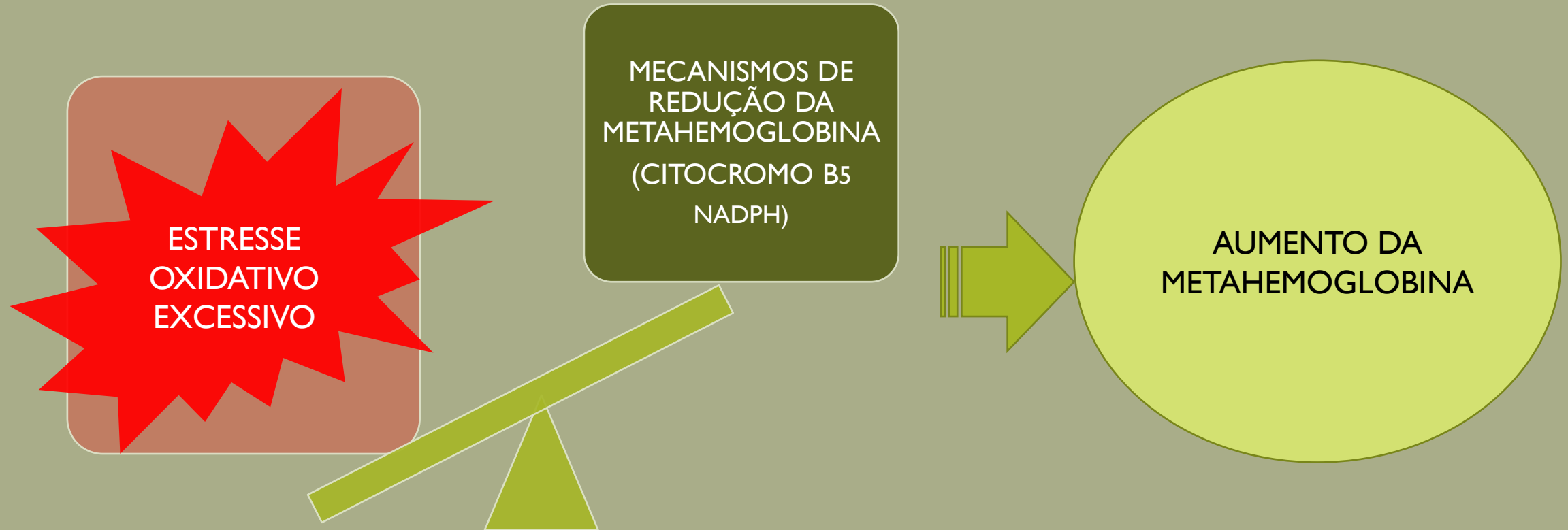
METAHEMOGLOBINA EM CONDIÇÕES FISIOLÓGICAS

ESTRESSE OXIDATIVO
EM CONDIÇÕES
FISIOLÓGICAS

MECANISMOS DE
REDUÇÃO DA
METAHEMOGLOBINA
(CITOCROMO B5
NADPH)

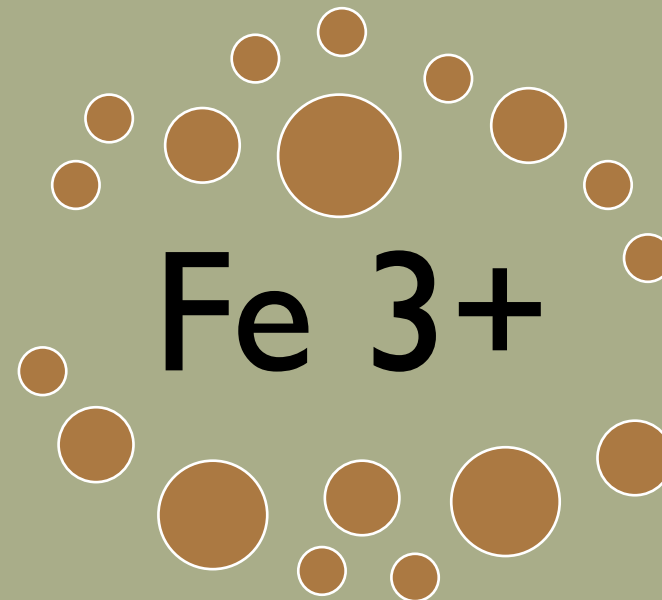
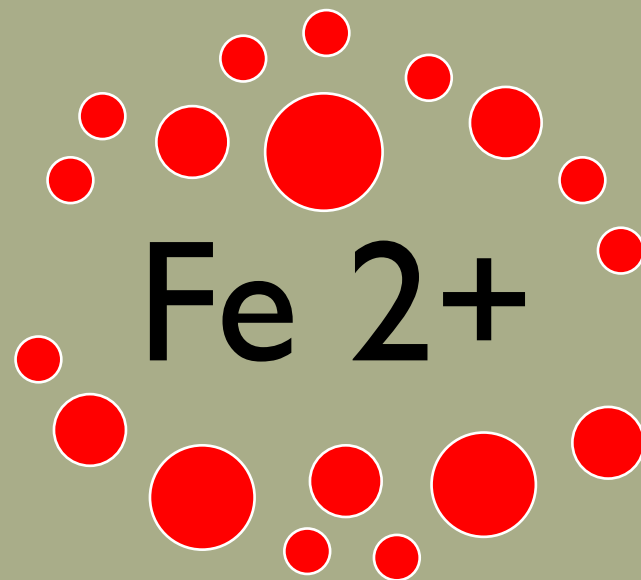


METAHEMOGLOBINEMIA ADQUIRIDA





DAPSONA/
HIDROXILAMINA



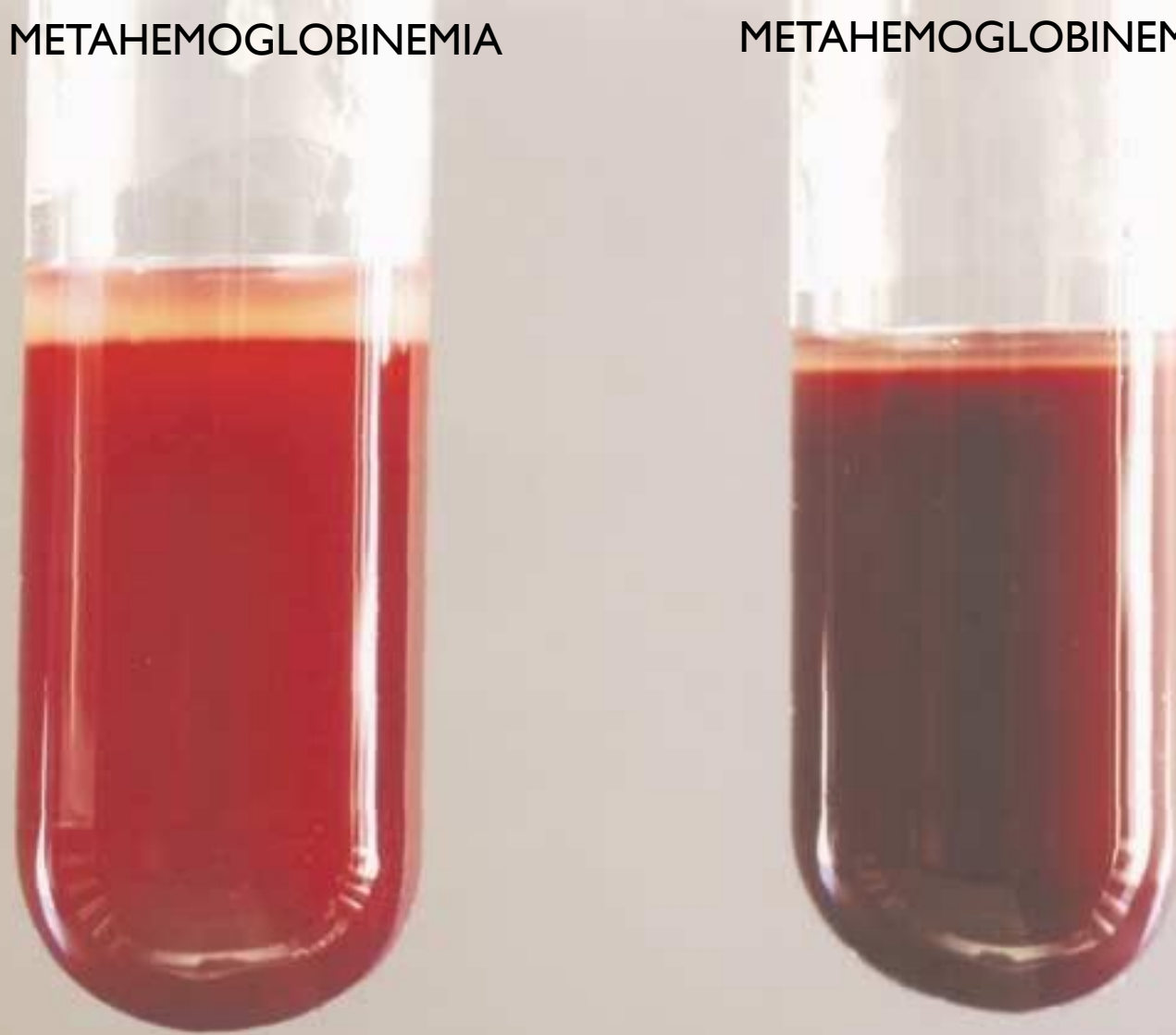
TRANSPORTE DE OXIGÊNIO

A large, thick red 'X' mark is superimposed over the text "TRANSPORTE DE OXIGÊNIO", indicating that this process is inhibited or blocked.

GASOMETRIA
ARTERIAL

SEM METAHEMOGLOBINEMIA

METAHEMOGLOBINEMIA



Review Article

Medicine (Baltimore) 2004; 83:265–273.

Methemoglobinemia: Pathogenesis, Diagnosis, and Management

Anna Skold, MD, MPH, Dominique L. Cosco, MD, and Robin Klein, MD

Antibióticos

- **Dapsona**
- Sulfonamida
- Sulfametoxazol

Anestésicos

- Benzocaína
- Bupivacaína
- Lidocaína
- Prilocaína

Nitratos

- Dinitrato de Isossorbida
- Nitroglicerina
- Nitrato de prata
- Nitroprusiato
- Poppers (nitrato recreativo)

Antimaláricos

- Cloroquina
- Primaquina

Analgésicos

- Celecoxibe
- Fenazopiridina
- Fenacetina

Review Article

Medicine (Baltimore) 2004; 83:265–273.

Methemoglobinemia: Pathogenesis, Diagnosis, and Management

Anna Skold, MD, MPH, Dominique L. Cosco, MD, and Robin Klein, MD

Acquired Methemoglobinemia

A Retrospective Series of 138 Cases at 2 Teaching Hospitals

Rachel Ash-Bernal, MD, Robert Wise, MD, and Scott M. Wright, MD

Medicine (Baltimore) 2004; 83:265–273.

**42% de todos os
casos adquiridos
estão relacionados à
Dapsona**

Review

Update on the use of dapsone in dermatology

Nohra Ghaoui¹, MD,  Edith Hanna², MD, Ossama Abbas³, MD, Abdul-Ghani Kibbi³, MD and Mazen Kurban^{3,4}, MD

DOENÇAS INFLAMATÓRIAS	• Rosácea • Granuloma anular • Lupus miliaris disseminatus faciei • Febre do mediterrâneo • Hidradenite Supurativa
DERMATOSES NEUTROFÍLICAS	• Síndrome de Sweet • Pioderma Gangrenoso
DERMATOSES EOSINOFÍLICAS	• Urticária Crônica Espontânea • Foliculite Eosinofílica • Fasciite Eosinofílica • Celulite Eosinofílica (síndrome de Wells) • Eritema Anular Eosinofílico
DERMATOSES PUSTULOSAS	• Acropustulose da Infância • Dermatose Subcórnea Pustular • Psoríase pustulosa Infantil Generalizada • Dermatose Pustular Erosiva
VASCULITES	• Vasculite Leucocitoclástica • Urticária Vasculite • Arterite de Células Gigantes • Eritema Elevatum Diutinum
DERMATOSES BOLHOSAS	• Pênfigo Vulgar • Pênfigo por IgA • Dermatose Linear Por IgA • Penfigoide Bolhoso • Liquen Plano Penfigoide • Dermatite Herpetiforme • Penfigoide das membranas da mucosa • Penfigoide Gestacional • Pênfigo foleáceo • Pênfigo Vegetante
GENODERMATOSES	• Doença de Hailey-Hailey

Recommendations for diagnosis and treatment of methemoglobinemia

Am J Hematol. 2021 Dec 1;96(12):1666-1678

PORCENTAGEM DA METAHEMOGLOBINA	ALTERAÇÕES CLÍNICAS
2% - 10%	Cor cinza azulada da pele
10% - 30%	Cianose
30% - 50%	Dispneia e síncope
50% - 70%	Acidose metabólica, coma, convulsões
>70%	Hipoxemia severa incompatível com a vida

Azul de Metileno 1% 1-
2mg/kg IV 3-5 minutos

N-acetilcisteína

Ácido
ascórbico

American Journal of Therapeutics 10, 289–291 (2003)

Methylene Blue

Jack Clifton II¹ and Jerrold B. Leikin^{2*}

CRITICAL REVIEW

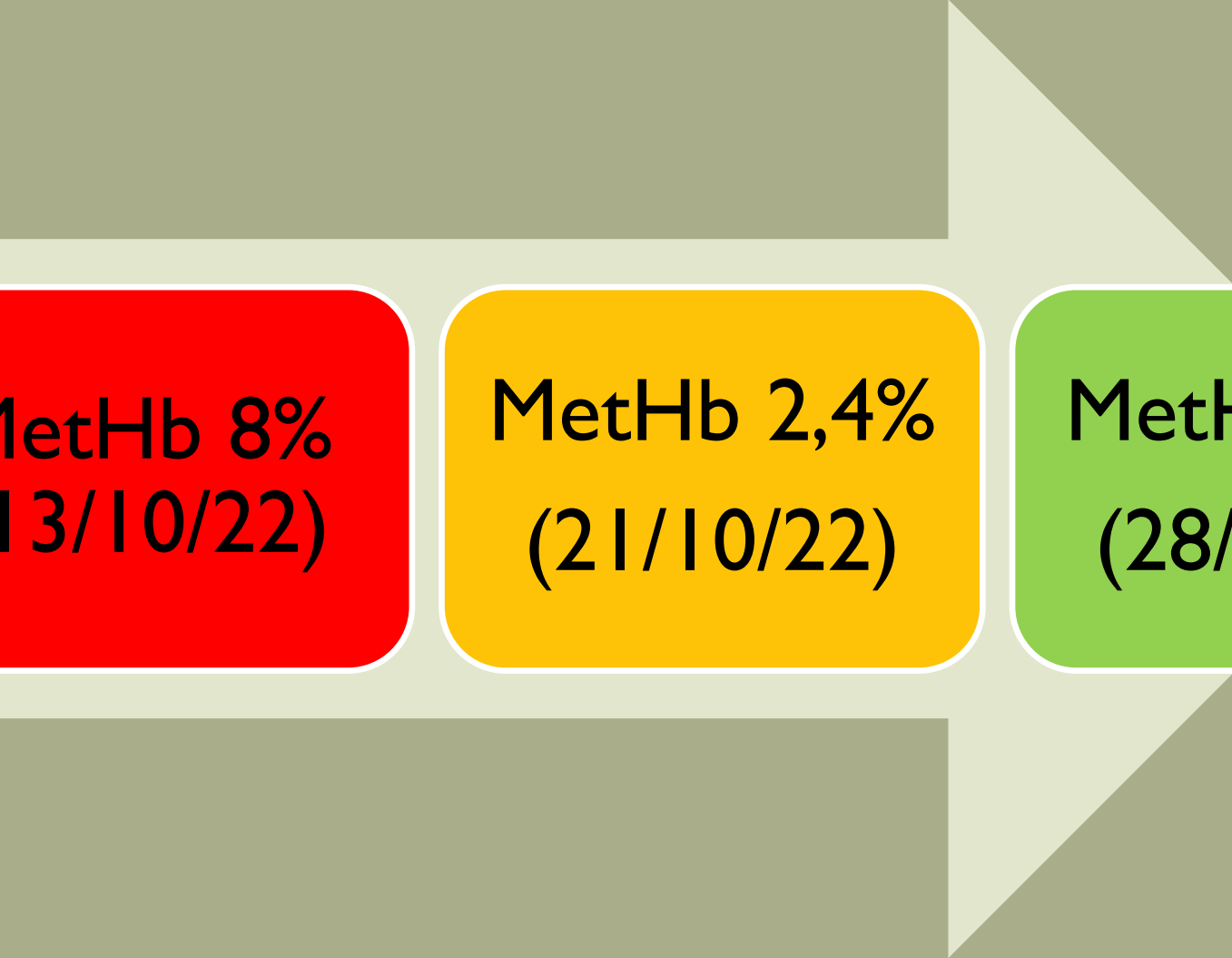
AJH

**Recommendations for diagnosis and treatment
of methemoglobinemia**

Am J Hematol. 2021 Dec 1;96(12):1666-1678

VOLTANDO AO CASO...

Suspensão
da condição
oxidante
(DAPSONA)



MetHb 8%
(13/10/22)

MetHb 2,4%
(21/10/22)

MetHb <2%
(28/10/22)

13/10/2022 MetHb 8%

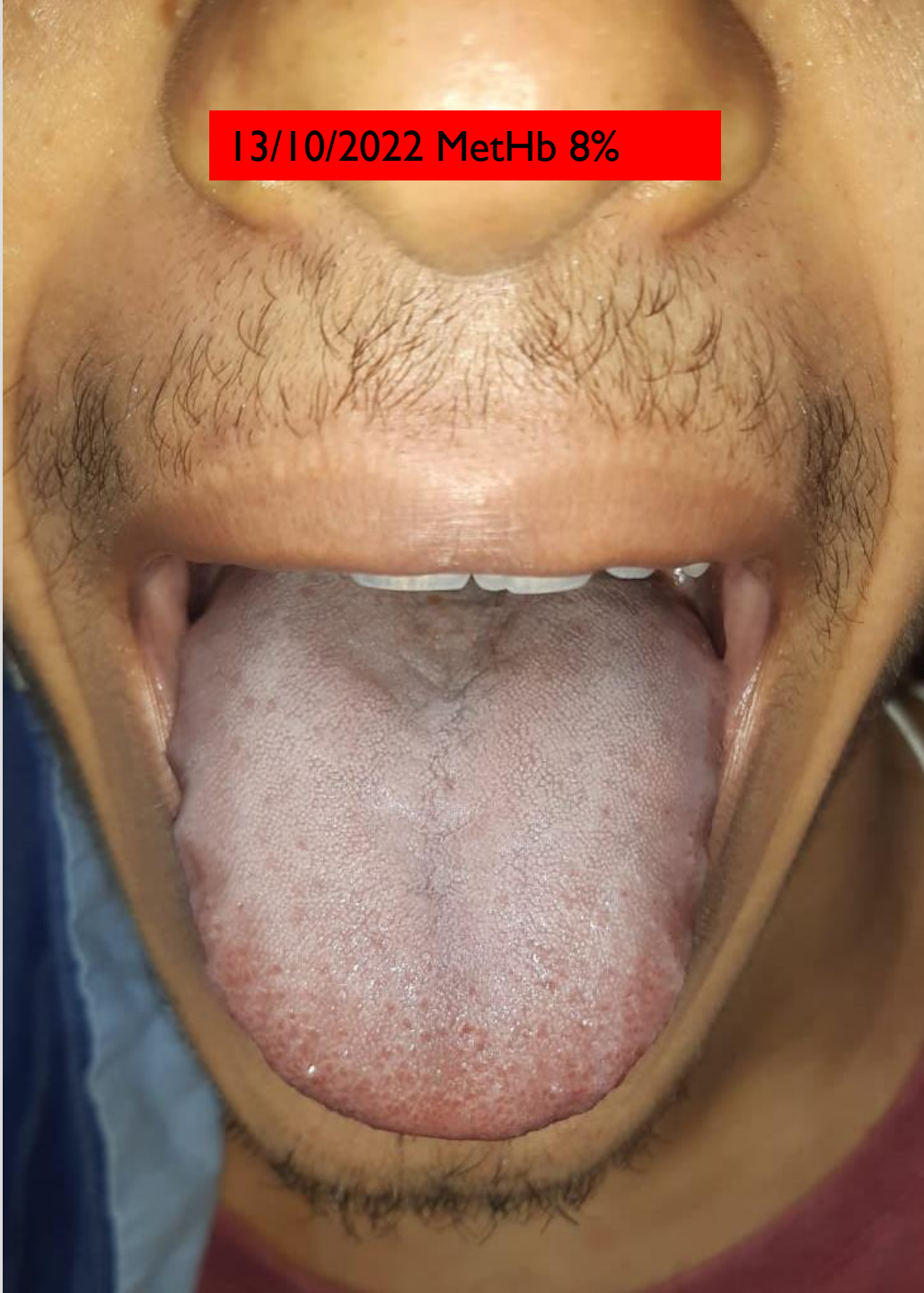
Samsung Dual Camera
RbgacDermato



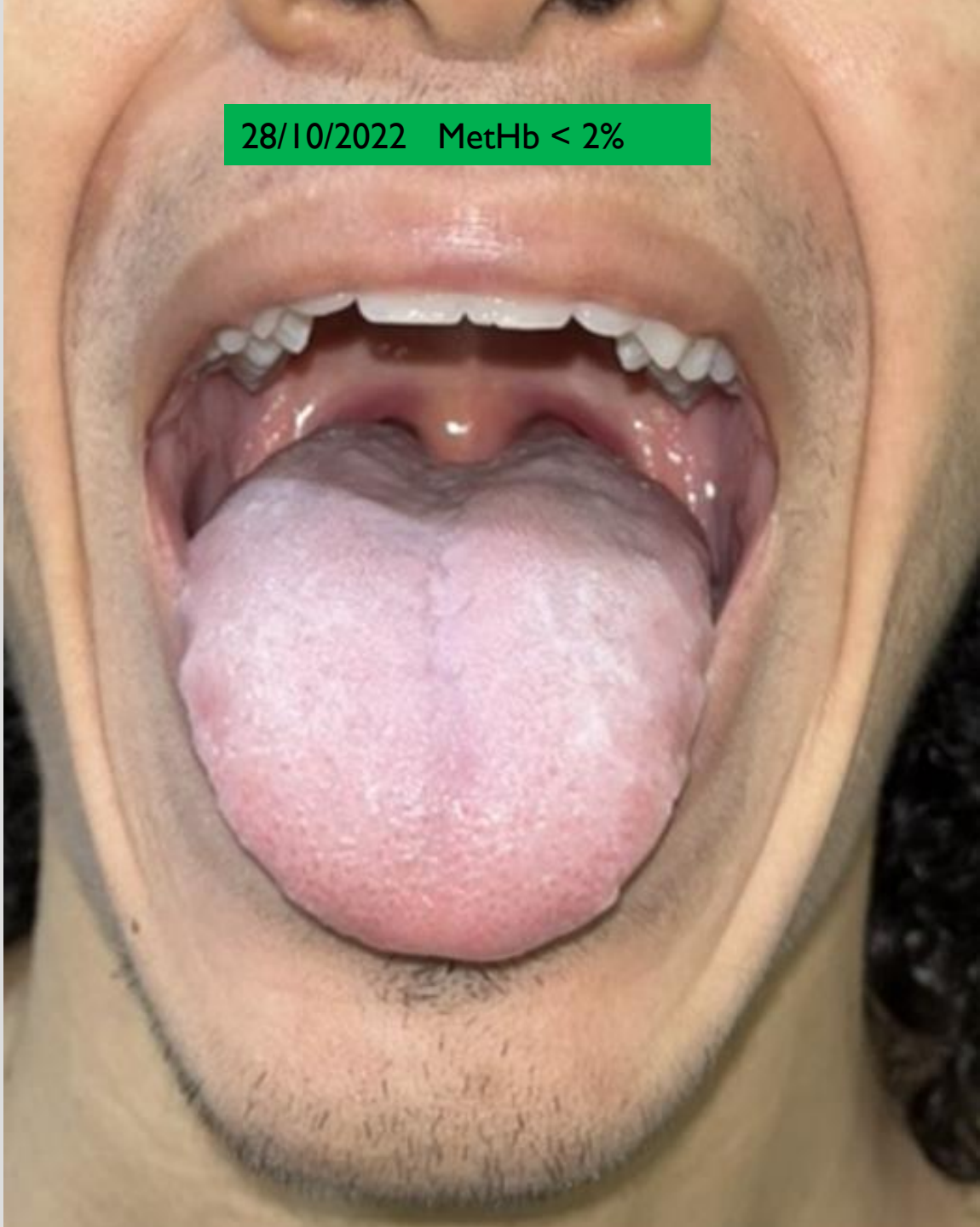
21/10/2022 MetHb 2,4%



13/10/2022 MetHb 8%



28/10/2022 MetHb < 2%



REFERÊNCIAS

- 1) Ash-Bernal R, Wise R, Wright SM. Acquired methemoglobinemia: a retrospective series of 138 cases at 2 teaching hospitals. *Medicine* 2004; 83 (5): 265–273.
- 2) Esbenshade AJ, Ho RH, Shintani A, Zhao Z, Smith LA, Friedman DL. Dapsone-induced methemoglobinemia. *Cancer* 2011; 117 (15): 3485–3492.
- 3) Park KH, Kim H, Lee CC, et al. Dapsone intoxication: clinical course and characteristics. *Clin Toxicol* 2010; 48 (6): 516–521.
- 4) Lee I, Barton TD, Goral S, et al. Complications related to dapsone use for *Pneumocystis jirovecii* pneumonia prophylaxis in solid organ transplant recipients. *Am J Transplant* 2005; 5: 2791–2795
- 5) Skold A, Cosco DL, Klein R. Methemoglobinemia: pathogenesis, diagnosis, and management. *South Med J*. 2011 Nov;104(11):757-61. doi: 10.1097/SMJ.0b013e318232139f. PMID: 22024786
- 6) Iolascon A, Bianchi P, Andolfo I, Russo R, Barcellini W, Fermo E, Toldi G, Ghirardello S, Rees D, Van Wijk R, Kattamis A, Gallagher PG, Roy N, Taher A, Mohty R, Kulozik A, De Franceschi L, Gambale A, De Montalembert M, Forni GL, Harteveld CL, Prchal J; SWG of red cell and iron of EHA and EuroBloodNet. Recommendations for diagnosis and treatment of methemoglobinemia. *Am J Hematol*. 2021 Dec 1;96(12):1666-1678. doi: 10.1002/ajh.26340. Epub 2021 Sep 23. PMID: 34467556; PMCID: PMC9291883.
- 7) Kaminecki I, Huang D. Methemoglobinemia. *Pediatr Rev*. 2021 Mar;42(3):164-166. doi: 10.1542/pir.2020-000943. PMID: 33648998
- 8) Hu Y, Geere M, Awan M, Leavitt AD, Brown LE, Pearson HJ, Gandelman JS, Kogan SC. Dapsone-induced methemoglobinemia and hemolysis in a woman without G6PD deficiency presenting with idiopathic urticaria. *Hematology*. 2022 Dec;27(1):1253-1258. doi: 10.1080/16078454.2022.2149943. PMID: 36444994; PMCID: PMC9788447.
- 9) Cefalu JN, Joshi TV, Spalitta MJ, Kadi CJ, Diaz JH, Eskander JP, Cornett EM, Kaye AD. Methemoglobinemia in the Operating Room and Intensive Care Unit: Early Recognition, Pathophysiology, and Management. *Adv Ther*. 2020 May;37(5):1714-1723. doi: 10.1007/s12325-020-01282-5. Epub 2020 Mar 19. PMID: 32193811; PMCID: PMC7467467.
- 10) Pushparajah Mak RS, Liebelt EL. Methylene Blue: An Antidote for Methemoglobinemia and Beyond. *Pediatr Emerg Care*. 2021 Sep 1;37(9):474-477. doi: 10.1097/PEC.0000000000002526. PMID: 34463662.
- 11) Barclay JA, Ziemba SE, Ibrahim RB. Dapsone-induced methemoglobinemia: a primer for clinicians. *Ann Pharmacother*. 2011 Sep;45(9):1103-15. doi: 10.1345/aph.1Q139. Epub 2011 Aug 18. PMID: 21852596.
- 12) Ward KE, McCarthy MW. Dapsone-induced methemoglobinemia. *Ann Pharmacother*. 1998 May;32(5):549-53. doi: 10.1345/aph.17003. PMID: 9606476.
- 13) Clifton J 2nd, Leikin JB. Methylene blue. *Am J Ther*. 2003 Jul-Aug;10(4):289-91. doi: 10.1097/00045391-200307000-00009. PMID: 12845393.
- 14) Sonck E, Bourmanne E, Bruteyn J, Dolip W. Methemoglobinemia due to use of poppers: a case report. *J Med Case Rep*. 2022 Jun 21;16(1):244. doi: 10.1186/s13256-022-03475-8. PMID: 35725643; PMCID: PMC9210596.
- 15) Ghaoui N, Hanna E, Abbas O, Kibbi AG, Kurban M. Update on the use of dapsone in dermatology. *Int J Dermatol*. 2020 Jul;59(7):787-795. doi: 10.1111/ijd.14761. Epub 2020 Jan 7. PMID: 31909480.

An aerial photograph of a densely populated urban area. The city features a mix of building styles, including several tall, multi-story apartment or office buildings with light-colored facades and red-tiled roofs. Other buildings are smaller and more varied in color. The streets are visible, with some cars parked or moving. A large, semi-transparent white rectangular box is centered over the middle of the image, containing the word "OBRIGADO!" in a bold, black, sans-serif font.

OBRIGADO!