# BAB VI

# KESIMPULAN DAN SARAN

## 6.1 Kesimpulan

Terapi oksigen hiperbarik merupakan salah satu modalitas terapi saat ini yang sangat membantu proses penyembuhan luka diabetik. Selain membantu penyembuhan luka diabetik terapi oksigen hiperbarik juga membantu peningkatan *high density lipoprotein* (HDL). Terapi oksigen hiperbarik mempunyai efek pleiotropik meningkatkan kadar kolesterol HDL. Kesimpulan dari penelitian ini adalah terapi oksigen hiperbarik mempunyai berpengaruh terhadap peningkatan kadar kolesterol HDL pasien diabetes melitus dengan luka diabetik.

## 6.2 Saran

Untuk para peneliti yang akan melakukan penelitian pada bidang ini melihat kendala pada penelitian ini saran yang diberikan adalah peneliti mau membiayai pasien dalam melakukan terapi oksigen hiperbarik, dikarenakan banyaknya pasien yang tidak melanjutkan terapi oksigen hiperbarik akibat biaya terapi oksigen hiperbarik yang tinggi. Yang ke-dua saran untuk penelitian selanjutnya adalah mengambil hasil kadar HDL pasien tidak hanya 2

kali yaitu sebelum dan sesudah diatas 5 kali mendapatkan terapi oksigen hiperbarik namun bisa diambil lagi ketika pasien mendapatkan terapi oksigen hiperbarik setelah 15 kali atau 20 kali.

Untuk LAKESLA saran saya adalah lebih mempromosikan mengenai kegunaan terapi oksigen hiperbarik dalam penyembuhan luka diabetik sehingga masyarakat lebih *aware* terhadap luka diabetik dan mendapatkan terapi yang adekuat untuk penyembuhan luka diabetik.

## DAFTAR PUSTAKA


1. Perkumpulan Endokrinologi Indonesia (PERKENI). Konsensus Pengelolaan dan Pencegahan Diabetes Melitus Tipe 2 di Indonesia 2011. [Internet] 2011 [Cited 2015 Apr 13] Available from: http://www.scribd.com/doc/93361274/Revisi- Final-KONSENSUS-DM-Tipe-2-Indonesia-2011#scribd

2. IDF. Diabetes Atlas sixth edition. [Internet] 2013 [Cited 2015 Feb 2]. Available from: www.idf.org/sites/default/files/EN_6E_Atlas_Full_0.pdf

3. Khanolkar M.P, Bain S.C. The Diabetic Foot. [Internet] 2008 Feb [Cited 2015 Feb 09] Available from: http://qjmed.oxfordjournals.org/content/101/9/685.full-text.pdf

4. Watkins, P. ABC of Diabetes. Fifth Edition. London. BMJ publishing Group Ltd; 2003. p. 42-76

5. Larry, J. Harrison's Endocrinology. Second Edition. New York. The McGraw-Hill Companies, Inc; 2010. p. 267-294.

6. Rubenstein, D. Lecture Notes Kedokteran Klinis Edisi Keenam. Jakarta. Penerbit Elangga; 2007. p. 177-195

7. Nuh Huda. Pengaruh Hiperbarik Oksigen (HBO) Terhadap Perfusi Perifer Luka Gangren pada Penderita DM di RSAL Dr. Ramelan Surabaya. [Dissertation]. Depok: Universitas Indonesia; Juli 2010. 151p.

8. Karadurmus N, Sahin M, Tasci C. Potential benefits of hyperbaric oxygen therapy on atherosclerosis and glycaemic control in patients with diabetic foot. [Internet] 2010 [Cited 2015 Feb 10] Available from: http://www.ncbi.nlm.nih.gov/pubmed/20602302

9. Gotto A, Pownall H. Manual of Lipid Disorders. Reducing the Risk for Coronary Heart Disease. Second edition. Pennsylvania. Williams & Wilkins; 1999. p. 72-3, 97-9

10. Velio B, Giuseppe V. Nrf2 activation as target to implement therapeutic treatments. [Internet] 2015 Feb [Cited 2015 Apr 20] Available from: http://www.ncbi.nlm.nih.gov/pubmed/25699252

11. Kudchodkar BJ, Pierce A, Dory L. Chronic hyperbaric oxygen treatment elicits an anti-oxidant response and attenuates atherosclerosis in apoE knockout mice.[Internet] 2006 Sep [Cited 2015 Feb 10]. Available from: http://www.ncbi.nlm.nih.gov/pubmed/16973170

12. Unit Kerja Kelompok Endokrinologi Anak dan Remaja, Ikatan Dokter Anak Indonesia, World Diabetes Foundation. Konsensus Nasional Pengelolaan Diabetes melitus Tipe 1. p. 1-7

13. Grossman S. Diabetes melitus and the metabolic syndrome. In: (eds.) Porths' Pathophysiology, Concepts of Altered Health States. 9th ed. Philadelphia: Wolters Kluwer Health | Lippincott Williams & Wilkins; 2014. p1312

14. Faisal Baraas. Kardiologi Molekul. Radikal bebas, disfungsi endotel, aterosklerosis, antioksidan, latihan fisik, dan rehabilitasi jantung. Jakarta. Yayasan Kardia Iqratama; 2006. p. 66-76, 266-273, 352

15. National Heart, Lung, and Blood Institute [Internet]. Explore Atherosclerosis. 2014 [Cited 2015 29 April]. Available from: http://www.nhlbi.nih.gov/health/health-topics/topics/atherosclerosis

16. Phoschol. Lipoprotein Metabolism [Image on the Internet] 2002 [Cited 2015 Apr 25]. Available from http://www.phoschol.com/areas_use/heart/heart3.php

17. Mathieu, D. Handbook on Hyperbaric Medicine. Lille, France. Springer; 2006. 812 p

18. Stephen R. Hyperbaric Oxygen – its mechanism and efficacy. [Internet] 2012 Jan [Cited 2015 Apr 28] Available from: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3058327/. p. 1-5

19. Basta G, Schmidt AM, De Caterina R. Advanced glycation end products and vascular inflammation: implications for accelerated atherosclerosis in diabetes. [Internet] 2004 Sep [Cited 2015 Feb 9] Available from: http://cardiovascres.oxfordjournals.org/content/63/4/582.long

20. Menteri Kesehatan Republik Indonesia. Keputusan Menteri Kesehatan Nomor 120/ MENKES/ SK/ II/ 2008 tentang Standar Pelayanan Medik Hiperbarik. Jakarta. Available from: http://www.scribd.com/doc/247123218/KMK-No-120-Ttg- Standar-Pelayanan-Medik-Hiperbarik#scribd. p. 4, 6-10.

21. Flegg, Jennifer and McElwain, Sean and Long, Robert. The use of hyperbaric oxygen therapy to treat chronic wounds: a review. [Internet] 2008 May [Cited 2015 Feb 3] Available from: http://eprints.qut.edu.au/18064/

22. Kudchodkar BJ, Judy W, Andras L. Hyperbaric Oxygen Reduces the Progression and Accelerates the Regression of Atherosclerosis in Rabbits. [Internet] 2000 Feb 28[Cited 2015 Feb 9] Available from: http://www.ncbi.nlm.nih.gov/pubmed/10845883

23. Constanze B, John F, Oram. Oxidized HDL the Paradox-idation of Lipoproteins. [Internet] 2003 [Cited 2015 Sept 27] Available from: http://atvb.ahajournals.org/content/23/9/1488.full

24. Kamisako T, Tanaka Y, Kishino Y. Role of Nrf2 in the alteration of cholesterol and bile acid metabolism-related gene expression by dietary cholesterol in high fat-fed mice. [Internet] 2014 [Cited 2015 Sept 28] Available from: http://www.ncbi.nlm.nih.gov/pubmed/24688217

25. Garg Abhimanyu, MBBS, MD. Insulin Resistance in the Pathogenesis of Dyslipidemia. [Internet] 1996 [Cited 2015 Nov 25] Available from: *care.diabetesjournals.org/content/19/4/387.full.pdf*

26. Brooks M, Gao Bifeng, Oxidative stress in health and disease: The therapeutic potential of Nrf2 activation. [Internet] 2011 [Cited 2015 Nov 25] Available from: http://www.sciencedirect.com/science/article/pii/S0098299711000501

27. Komoda Tsugikazu. The HDL Handbook. London, United Kingdom. Elsevier; 2010