PRESENCE NON-ALCOHOLIC FATTY LIVER DISEASE AS INDEPENDENT RISK FACTOR IN INCREASED OF CARDIOVASCULAR DISEASE: A SYSTEMATIC REVIEW

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Background & Aims

Cardiovascular disease (CVD) is still leading cause of morbidity and mortality in the world. Improvement in CVD perevention is one of key to prevent this. Traditional risk factor of CVD is shifting. Non-alcoholic fatty liver disease has become one of the most frequent chronic liver disease and its prevalence is likely to rise even further. Further research shown evidence points out that NAFLD has to be considered as a significant independent risk factor for subclinical and clinical CVD. The aim of this systematic review was to review association between NAFLD and CVD. Better knowledge about the association of these two disease can prevent CVD better.

Method

Systematic searching in 4 databases, Pubmed, Scopus, ScienceDirect, and Proquest use the keywords "NAFLD OR non-alcoholic fatty liver disease AND cardiovascular disease OR CVD". There are 1461 articles meets the keyword. The inclusion criteria were: 1) study including NAFLD patients and cardiovascular outcome; 2) Publication between 2005-2020; 3) fulltext in English. Two reviewers extracted data and assessed bias independently.

Conclusion

The studies were in different design but result the same outcome. These studies have examined the association of NAFLD with the presence of future CVD. The implication is that routine screening for NAFLD may be warranted to exclude and prevent CVD better.

Result

No.	Author	Country	Study	Design	Period	Sample (NAFLD or NAFLD/total)	Demographic			Duration of follow up	Result
							sex, male (%)	age (years)	BMI		
1	Allen AM, 2018	USA	Case-control	Prospective	1997-2014	3869/15209	48	53 (42–63)	33 (29–38)	7 (1-20) years	RR 1.96, p < 0.001
2	Motamed N, 2016	Iran	Cohort	Prospective	2008	1412/2804	n/a	53.65 ± 9.08	29.49 ± 3.86	10 years	p < 0.001
3	Trovato FM, 2016	Italy	Cohort	Prospective	2008-2014	men 292/544; women 368/907	44.2	50.27 ± 11.02	29.13 ± 4.16	11 years	decreased LV EF; men p < 0.0001, women p = 0.485
4	Lee SB, 2017	South Korea	Cohort	Prospective	2007-2011	1979/5121	68.1	53.8 ± 7.6	24.4 ± 2.9	n/a	calcified plaque OR 1.03, p = 0.673; non-calcified plaque OR 1.37 p = 0.001
5	Baratta F, 2019	Italy	Cohort	Prospective	n/a	643/856	62.5	56.4 ± 12.7	n/a	41.4 months	HR 2.41, p = 0.36
6	Chung GE, 2018	South Korea	Cross sectional	Retrospective	Jan - Dec 2010	1310/3300	62.9	54.1 ± 10.4	25.6 ± 2.6	n/a	OR 1.40, p = 0.022
7	Arslan U, 2007	Turkey	Cross sectional	Prospective	n/a	92/92	70.7	56.6 ± 10.3	27.9 ± 4.1	n/a	OR 6.73, p = 0.035
8	Chen CH, 2010	Taiwan	Cross sectional	Retrospective	Nov 2005 - Dec 2007	121/295	65.8	52.6 ± 11.2	24.7 ± 3.6	n/a	OR 2.462, p = 0.010
9	Chiang CH, 2010	Taiwan	Case-control	Prospective	Jan - Dec 2007	378/324	95.0	50.0 ± 9.0	25.7 ± 2.4	n/a	OR 1.89, p = 0.004
10	Choi DH, 2013	South Korea	Cross sectional	Retrospective	Jan 2009 - June 2011	134/134	27.6	65.2 ± 9.2	25.6 ± 3.4	n/a	OR 1.685, p = 0.03
11	Choi SY, 2009	South Korea	Cross sectional	Retrospective	Jan - Des 2006	5769/17350	52.3	50.05 ± 11.55	25.4 ± 2.7	n/a	p < 0.001
12	Josef P, 2013	Israel	Case-control	Prospective	Apr 2006 - Jun 2008	29/51	86	53 ± 7	30 ± 3	n/a	OR 2.5, p = 0.001
13	VanWagner LB, 2014	USA	Cross sectional	Retrospective	Jun 2010 - Aug 2011	232/2424	42.7	50.1 ± 3.6	30.6 ± 7.2	25 years	OR 1.33, p < 0.001
14	Hamaguchi M, 2007	Japan	Cohort	Retrospective	Jan - Dec 1998	312/1335	39.1	49.1 ± 8.7	25.1 ± 2.5	5-6 years	OR 4.12, p = 0.004
15	Stepanova M, 2012	USA	Cohort	Retrospective	1988-1994	2492/9121	46.1	n/a	n/a	171 months	OR 1.23, p < 0.05
16	Wong VW, 2011	Hong Kong	Cohort	Prospective	Oct 2007 - Nov 2008	356/612	70.8	63 ± 11	24.7 ± 3.9	87 +/- 22 weeks	OR 2.3, p < 0.001
17	Fracanzani, 2016	Italy	Cohort	Prospective	Jun 2002 - Dec 2004	125/250	87.2	62 ± 12	27.2 ± 2.9	10 years	HR 5.08, p = 0.001
18	Assy N, 2010	Israel	Case-control	Prospective	Apr 2006 - Jun 2008	29/61	86	53 ± 7	30 ± 3	n/a	OR 2.03, p < 0.001

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