bismillah

by UMPO PERPUSTAKAAN

Submission date: 08-Jul-2022 09:34PM (UTC+0700)
Submission ID: 1865003559
File name: KELOMPOK_3_HIV_AIDS_ver_danang.doc (105.5K)
Word count: 3273
Character count: 19371

The Effect Of Administrative Drug Due To Oxidative Stress On HIV Patients

:

A Literature Reviev

Pengaruh Pemberian Obat Akibat Stress Oksidatif Pada Penderita HIV :

Tinjauan Pustaka

Eka Hadi Pratama, Irvrilia Rahma, Figa Danang Hidayatulloh, Rahma Tri Fany, Fay Hurin in'zakia.

ABSTRACT

HIV-related neurocognitive problems have been associated with elevated levels of cerebrospinal fluid (CSF) as indications of oxidative stress, nerve damage, and inflammation as well as lower levels of neurotransmitters (HAND). HIV-related neurocognitive problems have been associated with elevated levels of cerebrospinal fluid (CSF) as indications of oxidative stress, nerve damage, and inflammation as well as lower levels of neurotransmitters (HAND). This study aims to collect and analyze articles related to drug administration in HIV patients. The design used is a literature review. Search articles were collected using the PubMed database by entering the keywords HIV, Oxidative Stress, and Effect. Since it is known that there is a stress process oxidative stress in HIV patients a type of antioxidant developed for protection against the occurrence of HIV a mixture of various antioxidants that do not dangerous like vitamins and their derivatives able to suppress the symptoms of HIV

INTRODUCTION

A decline in CD4 cells, which results in a gradual loss of immunity, is a hallmark of HIV infection. An imbalance between the oxidant and antioxidant systems causes oxidative stress. Superoxide dismutase, catalase, glutathione peroxidase, and other enzymatic and nonenzymatic components make up the oxidant system (carotenoids, tocopherols, ascorbates, bioflavonoids, bilirubin, uric acid, etc.) Antioxidants found in human serum are helpful in preventing HIV-1 replication caused by ROS cells (superoxide anion, hydroxyl radical, hydrogen peroxide, etc.) that have a pro-cytokine oxidant action and/or activate

polymorphonuclear leukocytes. Due to interactions between several antioxidant molecules in vivo, no single component of the serum antioxidant complex can accurately reflect the effectiveness of blood protection. The function of all antioxidants present in blood and bodily fluids is based on the Total Antioxidant Status (SAT). Although early indicators of oxidative stress that may be shown by total antioxidant levels in HIV patients were not frequently discovered, earlier research have shown this oxidative stress roleplays in the activation of HIV propagation and immunological development. Given that oxidative stress is a known factor in HIV patients, various types of antioxidants have been developed for protection against the occurrence of HIV, a mixture of various harmless antioxidants such as vitamins and derivatives are able to suppress HIV symptoms. These vitamins are A, C, and E. Vitamins E and A suppress oxidative stress, while vitamin C suppresses HIV replication by activating the activity of the enzyme transcriptase.

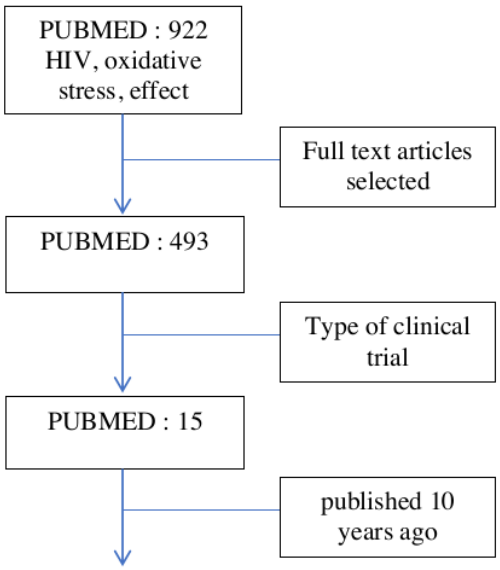
Antioxidant supplementation showed a beneficial impact on positively modifying oxidative stress parameters HIV-infected and than HIV-TB patients, which were linked to elevated oxidative stress parameters HIV and TB infections. The most common killer of HIV-positive people worldwide is TB. It is thought oxidative stress contributes significantly for the spread of HIV infection. The importance with oxidative stress (OS) as and contributing component for various infections with drug-related toxicities is revealed by a variety of pieces of data. Oxidative stress in humans is a side effect of HIV and anti-retroviral therapy. Through mycobacteria's activation of phagocytes, which may further aid in suppression, oxidative stress has also been linked to TB infection. Due to tissue inflammation, poor nutrition, and weakened immunity, tuberculosis patients have been shown to experience high levels of oxidative stress; this stress is exacerbated in people who also have HIV-TB co-infection. Additionally, patients with HIV-TB coinfection have been found to have elevated levels of oxidative stress.

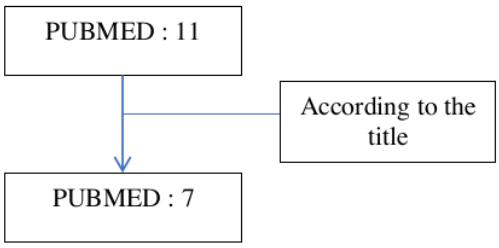
Early disease oxidative imbalance in HIV-infected patients; serum and tissue antioxidant ranges are slow, and than peroxidation produc are tall. reduced plasma malondialdehyde (MDA) tiers, decreased Plasma Glutathione (GSH) ranges, decreased antioxidant superoxide dismutase (SOD) supplementation may

additionally help shield in opposition to oxidative pressure related to infection and drug remedy. HIV-inflamed humans are specifically at risk of tuberculosis, each of the reactivation for a latent infection and than a brand new infection with speedy progression to an active sickness. In the year of 2008, more than a 3rd for humans infected with Humman Imunologi Virus also had tuberculosis (TB). research from 2007 showed that out of 9.three million new Tuberculosis instances, 1.4 million had been additionally living with Humman Imunologi Virus and 500,000 HIV-high-quality Tuberculosis patients died within the identical yr.

METHODS

The research design used in this study is a Literature Review. Literature Review is a design design by searching for literature from journals that have been visited and reviewed. The strategy of this research article uses database PubMed. The keywords used in the search were HIV, oxidative stress, and effect. With the search results on the PubMed website as many as 922. Free Full text articles selected. There were 493 findings, then narrowed down to clinical trial articles selected with 15 results. Published within 10 years there are 11 results. The articles are then sorted according to topic so that 7 research articles are collected which are considered to represent the entire research article.





Result

NO	TITLE	RESEARCHER	SAMPLE	METHOD	RESULTS
1	Effect of Vitamin A and C Supplementation Oxidative Stress in HIV and HIV-TB co-infection at Lagos University Teaching Hospitasl (LUTH) Nigeria world	Oluwamayowa Makinde, Kunle Rotimi, Victor Ikumawoyi, Titilope Adeyemo, Minggu Olayemi	90	Clinical Trials	HIV / TB coinfection and HIV monoinfection effect decreasing in the capacity of the antioxidant system for govern oxidative pressure. but exogenous anti-oxidant supplementation isn't superb in definitely modulating associated oxidative strain..
2	Adjunct N-Acetylcysteine Treatment in Hospitalized Tubercolosis Dampens the	Izabella P.A, Eduardo P.A, Mariana A.P, Marcus VG, Vitoria S.P, dkk	39	Clinical Trials	there was a good sized improvement in GSH ranges and total antioxidant popularity in sufferers undergoing NAC. This showed a massive discount in lipid

	Oxidative Stress in Peripheral Blood: Results From the RIPENACTB Study Trial				peroxidation compared to the manipulate institution. to ease the weight of TB and enhance medical management of PLHIV, the systematic use of adjunctive NAC therapy can be considered.
3	Omega 3 Fatty Acids Supplementation and Oxidative Stress in HIV-Seropositive Patients. A Clinical Trial	Norma AL, Teresa A., Genaro GO, Fermín P. Pacheco-Moises3, dkk.	70	Clinical Trials	Triglycerides may additionally decrease with omega 3 fatty acids in comparison with placebo, however there has been no group distinction in markers of oxidative strain
4	Impact of minocycline on cerebrospinal fluid markers of oxidative stress, neuronal injury, and inflammation in HIV-seropositive individuals with	Ned Sacktor, Sachiko Miyahara, Scott Evans, Giovanni Schifitto, dkk	107	Clinical Trials	lipid markers of oxidative strain (ceramides) for people may be diminished with Minocycline, however the impact of minocycline on other CSF markers doesn't located

	cognitive impairment				
5	Effect of Chocolate and Yerba Mate Phenolic Compounds on Inflammatory and Oxidative Biomarkers in HIV/AIDS Individuals	Aline A. Petrilli, Suelen J. Souza, Andrea M. Teixeira, dkk	92	Clinical Trials	The consequences showed that for 15 days through consuming sixty five g of darkish chocolate can growth the attention of HDL-c. supplement with 3 g of yerba mate too by using no longer converting the pen and parameters of inflation or oxidation on this challenge.
6	A randomized, placebo-controlled pilot trial of N-acetylcysteine on oxidative stress and endothelial function in HIV-infected older adults receiving antiretroviral treatment	Samir K Gupta , Lisa M Kamendulis, Matthias A Clauss, Ziyue Liu	75	Clinical Trials	NAC may additionally boom the potential of cells to penetrate higher ROS ranges of crimson blood cellular GSH ranges growth even as RBC GSSG levels lower, as a consequence causing a non-enormous growth in the universal GSH:gssg ratio with each doses of PharmaNAC as compared to placebo.

7	Assessing statin effects on cardiovascular pathways in HIV using a novel proteomics approach: Analysis of data from INTREPID, a randomized controlled trial	Mabel Toribio a , Kathleen V. Fitch a , Lauren Stone a , dkk.	252	Clinical Trials	big decreases in tfpi, PON3, and LDLR tiers and increases in Gal4 and IGFBP-2, Station-prompted proteins. Key concerned in coagulation, Redox Signaling, oxidative strain, and glucose. Pitavastatin causes a extra decrease in TFPI than pravastatin.

DISCUSSION

Oxidative strain is remembered to expect a extensive part within the development of HIV sickness. there's obvious proof that oxidative pressure provides to three components of HIV illness, consisting of viral replication, incendiary reaction and faded resistant mobile growth. there's a huge cooperation for oxidative stress of TB. In aspiratory TB, there in a ramification is some markers of flowing free excessive motion, which proposes progressing oxidative pressure and diminished enemy of oxidant motion that might add to the improvement of lung functionality irregularities. This observe changed into directed for investigate adjusting effect for exogenous enemy of oxidant supplementation on contamination movement in Humman Imunologi Virus mono-tainted with Humman Imunologi Virus- Tuberculosis -tainted topics.

Various examinations have demonstrated the way that the ideal host invulnerable reaction to microbes can be impacted by oxidative pressure. By and large, redox homeostasis issues are portrayed by an awkwardness between free extremists and cell reinforcement atoms that can cause cell passing and tissue

harm. The lungs are ceaselessly presented to numerous exogenous or potentially pathogenic oxidative mixtures that require exceptionally effective cell reinforcement components to keep away from tissue harm and fuel of the host insusceptible reaction.

In HIV-TB coinfected subjects inside the examine effect factor diet and vit.C supplementation on oxidative pressure in HIV and Humman Imunologi Virus- Tuberculosis coinfection at Lagos college coaching medical institution (LUTH) Nigeria, there were essentially better GSH and Grass tiers in subjects who did not get supplementation contrasted and subjects given nutrients An and C. Contrasting post-supplementation degrees of oxidative pressure report with gauge showed altogether decrease Grass and pussycat ranges with basically higher put up-supplementation MDA stages. loss of yearning, poor gastrointestinal retention, expanded loss of vitamin An or intense stage responses in tuberculosis may upload to those discoveries and endorse that this complement might not practice a shielding process as an enemy of oxidant against oxidative pressure on the trial portions applied and won't deliver a protecting effect. gain likewise in Humman Imunologi Virus- Tuberculosis coinfection. high MDA degrees for these subjects show increased lipid peroxidation which similarly demonstrates the failure of nutrients C and A to protect patients from drug-brought about oxidation or ailment and consequently illness movement.

In a observe The effect of minocycline on cerebrospinal fluid markers of oxidative pressure, nerve injury, and irritation in HIV-seropositive people with cognitive impairment Perceptions of raised CSF lipid metabolites with minocycline treatment with none development in neuropsychological checking out suggest that neither of those discoveries converts into scientific benefit. in neurocognitive execution or that a extra drawn out remedy duration is needed. The absence of effect on different CSF markers of oxidative pressure, aggravation, or nerve harm recommends that the effect is exceptionally unassuming. Our outcomes moreover suggest that CSF lipid metabolites is probably sensitive markers of CNS damage that ought to be moreover investigated and joined with distinctive markers, as an instance, neuroimaging to evaluate evidence of neuroprotection in destiny HAND medical preliminaries.

Inside the observe of the effect from Chocolate Phenolic Compounds and Yerba Mate on Inflammatory and Oxidative Biomarkers in HIV/AIDS people, this take a look at showed in reality massive contrasts between the utilization of dim chocolate, fake treatment chocolate, yerba mate and fake remedy with mate is(p=0.047). there was no measurably massive distinction among suggest HDL-c ratings after supplementation with dim chocolate and fake remedy chocolate (p=zero.09) making use of the take a look at-changed Bonferroni, yet a absolutely first rate contrast among the 2 regimens at the same time as making use of scholar matched check (p = 0.043). Contrasted with sample values, utilization of sixty five g dull chocolate expanded the mean HDL-c focus (p=zero.008), however faux treatment chocolate utilization failed to construct the mean HDL-c fixation (p=zero.14). No progressions had been seen in hs-CRP, fibrinogen, TBARS or white platelets. business enterprise of yerba mate did not reason changes in the broke down oxidative for provocative boundaries. In an in vivo observe including 32 mice separated into the 4 gatherings (manipulate, manage-mate, hypercholesterolemic and hypercholesterolemic-mate), Mosimman et al. additionally noticed no distinction within the movement of HDL-c proteins, TBARS or most cancers prevention agents, regardless of the larger degree of yerba mate and longer organization time applied (months of remedy with 400mL of tea extricate/day). nevertheless, there has been a decrease in atherosclerotic area inside the hypercholesterolemic associate bunch.

In a study Assessing the effects of statins on cardiovascular pathways in HIV using a novel proteomic approach: Data analysis from INTREPIDRESEARCH METHOD The research design used in this study is the Literature Review. Writing Review is a draft configuration via looking for writing from diaries that have been visited and surveyed. The procedure of this exploration article utilizes the PubMed web crawler. The catchphrases utilized in the pursuit were HIV AND Oxidative Stress AND Effect. With the query items on the PubMed site upwards of 922. The full text articles were then chosen for nothing. There were 493 discoveries, then they were reduced to the kinds of clinical preliminary articles with 15 outcomes. Subsequent to being sifted from

the extended period of distribution a long time back, there were 11 outcomes. The articles are then arranged by the point with the goal that 7 exploration articles are gathered which are viewed as illustrative of the whole examination article.

In the study of Omega 3 Fatty Acid Supplementation and Oxidative Stress in HIV-Seropositive Patients. Clinical Trial, No distinction in viral burden was found toward the finish of the review. Notwithstanding, in the people who got omega 3 unsaturated fats, viral burdens would in general diminish while those in the benchmark group would in general increment. The unsaturated fats inactivate creature covered infections, for example, myxoviruses, paramyxoviruses, arboviruses, and herpes infections promptly after contact at convergences of 5-25 g/ml.twenty-one, and it has been proposed that DHA may likewise have a comparative ability to inactivate HIV. This is applicable in light of the fact that HIV contamination itself can cause unfriendly changes in the vascular endothelium. In this review, the impact of 2.4g of omega 3 unsaturated fats on oxidative pressure was assessed. We found that in HIV-seropositive patients, this portion brought down fatty substances (TG) as recently detailed in these patients. Likewise Parandi et al revealed a decrease of 63.2 ± 86.9 mg/dl without changes in all out cholesterol, LDL-C, or HDL-C in 41 HIV+ subjects with hypertriglyceridemia (>150 mg/dl) after omega 3 unsaturated fat treatment (1, 9 g EPA and 1.5 g DHA). In any case; Oliveira et al found no impact on lipids in the wake of utilizing 3 g of fish oil in a similar patient.

In a randomized placebo-controlled pilot trial of N-acetylcysteine on oxidative stress and endothelial characteristic in HIV-inflamed adults receiving antiretroviral treatment, a potential, randomized, double-blind, three-arm, parallel-institution, placebo-controlled, trial trial was carried out. in HIV-infected patients who are at least 50 years of age and receiving virologically suppressed art (medical-Trials.gov NCT01962961) to evaluate the capability efficacy and protection of PharmaNAC, a commercially available product this is taken into consideration a supplement and does not require food and Drug administration approval (http://www.pharmanac.com/; BioAdvantex Pharma Inc., Mississauga, Ontario, Canada). PharmaNAC contains 900 mg of NAC as an bubbling tablet with out the sulfur odor associated with other forms of NAC.

NAC is broadly used as a amazing modulator of oxidative pressure due to the

fact it's miles a precursor of glutathione, an crucial antioxidant molecule in promoting redox homeostasis. The cytoprotective residences of NAC are clinically verified during TB and HIV chemotherapy stopping drug-brought on hepatotoxicity. Nacetylcysteine (NAC) is a sulfur hydroxyl compound that replenishes intracellular cysteine required for glutathione regeneration. Glutathione is the most important intracellular antioxidant chargeable for controlling oxidative strain and looks to be decreased in those infected with HIV.

In the study of Supplementary Treatment of NAcetylcysteine in Hospitalized Patients with HIV-Associated Tuberculosis Reducing Oxidative Stress in Peripheral Blood: Results From the RIENACTB Study Trial, Various investigations have demonstrated the way that ideal host invulnerable reactions to microbes can be impacted by oxidative pressure. As a rule, redox homeostasis issues are described by an irregularity between free extremists and cell reinforcement particles that can cause cell passing and tissue harm. The lungs are constantly presented to numerous exogenous or potentially pathogenic oxidative mixtures that require exceptionally proficient cancer prevention agent components to stay away from tissue harm and compounding of the host safe reaction. NAC is generally utilized as a strong modulator of oxidative pressure since it is a forerunner of glutathione, a significant cell reinforcement particle in advancing redox homeostasis. The cytoprotective properties of NAC are clinically demonstrated during TB and HIV chemotherapy forestalling drug-actuated hepatotoxicity. In this review, we meant to survey the effect of adjunctive NAC treatment on have safe reaction and redox homeostasis in hospitalized Humman Imunologi Virus or Tuberculosis patients. Taking into account that these patients show less fortunate wellbeing status contrasted with non-hospitalized subjects, it is basic to give most extreme consideration regarding chasing after new assistant treatments and subsequently further developing the ongoing remedial conventions utilized for this specific gathering of people.

CONCLUSION

There is no effective modulation and useful function for diet vit. C and vit.A supplementation on the oxidative stress index in HIV monoinfected and HIV-TB coinfected sufferers. HIV/TB coinfection and HIV

monoinfection seem to lessen the capability of the anti-oxidant gadget to control oxidative strain, but, exogenous anti-oxidant supplementation does no longer seem to have a useful position in positively modulating the associated oxidative strain.

REFERENCE

Amador-Licona, N., Díaz-Murillo, T. A., Gabriel-Ortiz, G., Pacheco-Moises, F. P., Pereyra-Nobara, T. A., Guízar-Mendoza, J. M., Barbosa-Sabanero, G., Orozco-Aviña, G., Moreno-Martínez, S. C., Luna-Montalbán, R., & Vázquez-Valls, E. (2016). Omega 3 fatty acids supplementation and oxidative stress in HIV-seropositive patients. A clinical trial. *PLoS ONE*, *11*(3), 1–11. https://doi.org/10.1371/journal.pone.0151637

Makinde, O., Rotimi, K., Ikumawoyi, V., Adeyemo, T., & Olayemi, S. (2017). Effect of vitamin A and vitamin C supplementation on oxidative stress in HIV and HIV-TB co-infection at Lagos University Teaching Hospital (LUTH) Nigeria. *African Health Sciences*, *17*(2), 308–314. https://doi.org/10.4314/ahs.v17i2.3

Model, R., Preeclampsia, O. F., & Mice, I. N. (2016). Copyright © 2016 Wolters Kluwer Health , Inc . All rights reserved . *Transplantation*, *34*(June 2014), 10349.

Petrilli, A. A., Souza, S. J., Teixeira, A. M., Pontilho, P. M., Souza, J. M. P., Luzia, L. A., & Rondó, P. H. C. (2016). Effect of chocolate and yerba mate phenolic compounds on inflammatory and oxidative biomarkers in HIV/AIDS individuals. *Nutrients*, *8*(5). https://doi.org/10.3390/nu8050132

Sacktor, N., Miyahara, S., Evans, S., Schifitto, G., Cohen, B., Haughey, N., Drewes, J. L., Graham, D., Zink, M. C., Anderson, C., Nath, A., Pardo, C. A., McCarthy, S., Hosey, L., & Clifford, D. (2014). Impact of minocycline on cerebrospinal fluid markers of oxidative stress, neuronal injury, and inflammation in HIV-seropositive individuals with cognitive impairment.

Journal of NeuroVirology, *20*(6), 620–626. https://doi.org/10.1007/s13365-014-0292-0

Safe, I. P., Amaral, E. P., Araújo-Pereira, M., Lacerda, M. V. G., Printes, V. S., Souza, A. B., Beraldi-Magalhães, F., Monteiro, W. M., Sampaio, V. S., Barreto-Duarte, B., Andrade, A. M. S., Spener-Gomes, R., Costa, A. G., Cordeiro-Santos, M., & Andrade, B. B. (2021). Adjunct N-Acetylcysteine Treatment in Hospitalized Patients With HIV-Associated Tuberculosis Dampens the Oxidative Stress in Peripheral Blood: Results From the RIPENACTB Study Trial. *Frontiers in Immunology*, *11*, 1–10. https://doi.org/10.3389/fimmu.2020.602589

Toribio, M., Fitch, K. V., Stone, L., Zanni, M. V., Lo, J., de Filippi, C., Sponseller, C. A., Lee, H., Grundberg, I., Thompson, M. A., Aberg, J. A., & Grinspoon, S. K. (2018). Assessing statin effects on cardiovascular pathways in HIV using a novel proteomics approach: Analysis of data from INTREPID, a randomized controlled trial. *EBioMedicine*, *35*, 58–66. https://doi.org/10.1016/j.ebiom.2018.08.039

bismillah

ORIGINALITY REPORT

20%	14%	20%	8%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	Samir K. Gupta, Lisa M. Kamendulis, Matthias A. Clauss, Ziyue Liu. "A randomized, placebo-controlled pilot trial of N-acetylcysteine on oxidative stress and endothelial function in HIV-infected older adults receiving antiretroviral treatment", AIDS, 2016 Publication	3%
2	www.mdpi.com Internet Source	2%
3	Norma Amador-Licona, Teresa A. Díaz-Murillo, Genaro Gabriel-Ortiz, Fermín P. Pacheco-Moises et al. "Omega 3 Fatty Acids Supplementation and Oxidative Stress in HIV-Seropositive Patients. A Clinical Trial", PLOS ONE, 2016 Publication	2%
4	www.ajol.info Internet Source	2%
5	Izabella P. Safe, Eduardo P. Amaral, Mariana Araújo-Pereira, Marcus V. G. Lacerda et al. "Adjunct N-Acetylcysteine Treatment in	1%

	Hospitalized Patients With HIV-Associated Tuberculosis Dampens the Oxidative Stress in Peripheral Blood: Results From the RIPENACTB Study Trial", Frontiers in Immunology, 2021 Publication	
6	Ned Sacktor, Sachiko Miyahara, Scott Evans, Giovanni Schifitto et al. "Impact of minocycline on cerebrospinal fluid markers of oxidative stress, neuronal injury, and inflammation in HIV-seropositive individuals with cognitive impairment", Journal of NeuroVirology, 2014 Publication	1 %
7	worldwidescience.org Internet Source	1 %
8	Mabel Toribio, Kathleen V. Fitch, Lauren Stone, Markella V. Zanni et al. "Assessing statin effects on cardiovascular pathways in HIV using a novel proteomics approach: Analysis of data from INTREPID, a randomized controlled trial", EBioMedicine, 2018 Publication	1 %
9	doaj.org Internet Source	1 %
10	www.ncbi.nlm.nih.gov Internet Source	1 %

11	pesquisa.bvsalud.org Internet Source	1 %
12	www.jove.com Internet Source	1 %
13	Submitted to University of Wisconsin, La Crosse Student Paper	1 %
14	matecindiana.com Internet Source	1 %
15	vestnikramn.spr-journal.ru Internet Source	1 %
16	zenodo.org Internet Source	1 %
17	Www.mdpi.com Internet Source	<1 %
18	Aline Petrilli, Suelen Souza, Andrea Teixeira, Patricia Pontilho, José Souza, Liania Luzia, Patricia Rondó. "Effect of Chocolate and Yerba Mate Phenolic Compounds on Inflammatory and Oxidative Biomarkers in HIV/AIDS Individuals", Nutrients, 2016 Publication	<1 %

Exclude quotes On

Exclude matches Off

Exclude bibliography On