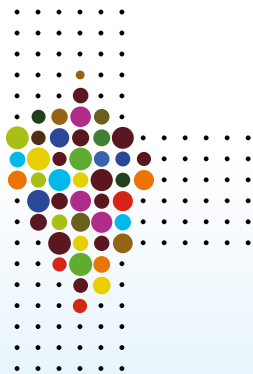


42nd WORLD CONGRESS OF VINE & WINE



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BOOK OF ABSTRACTS

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L'attività vasodilatatrice di entrambi i VM intatti e ossidati era circa 7 volte maggiore di quella del vino bianco standard. L'ossidazione del vino macerato per 48 ore non ha comportato variazioni nel suo massimo effetto vasodilatatore nonostante i significativi cambiamenti nelle proprietà organolettiche. Alle concentrazioni più basse (fino a 1‰), tuttavia, il VM intatto ha mostrato una maggiore potenza vasodilatatrice rispetto al VM ossidato.
Supportato dal progetto della Fondazione Croata per la Scienza No. 8652

2019-2223: EXPRESSION OF LEUCOCYTES FOLLOWING MYOCARDIAL INFARCTION IS MODULATED BY WHITE WINE CONSUMPTION

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A permanent coronary ligation was performed to determine how moderate white wine consumption, with low and high phenolic content, modulates inflammatory cells infiltration of the ischemic myocardium. Male Sprague-Dawley rats were given either a combination of different white wines and water or water only, for 28 days. Following coronary ligation, animals were kept alive for 24 hours. Five areas of myocardial wall were analysed -infarct/ischemic zone, three peri-infarct/border zones and a control/non-ischemic zone -to determine the expression of immunoreactivity for myeloperoxidase (MPO)-neutrophils marker and cluster of differentiation 68 (CD68)- macrophages marker.

Significantly smaller expression for both MPO and CD68 was found in all three peri-infarct zones of wine drinking animals ($p < 0.001$). There was no difference in expression of leukocyte markers between animals drinking standard and polyphenol-rich white wine, although for CD68, a non-significant attenuation was noticed in the latter. The wine drinking inflammatory attenuation was comparable to the effect of post-ischemic reperfusion or to the effects of some anti-inflammatory medications. We conclude that white wine consumption positively modulates peri-infarct inflammatory infiltration and we expect that this effect will be conveyed to later phases of infarct healing.

Supported by Croatian Science Foundation project No. 8652

DIE EXPRESSION VON LEUKOZYTEN NACH MYOKARDINFARKT WIRD DURCH DEN KONSUM VON WEIßWEIN MODULIERT

Es wurde eine permanente Koronarligatur durchgeführt, um zu bestimmen, wie ein moderater Weißweinkonsum mit niedrigem und hohem Phenolgehalt die Infiltration der Entzündungszellen des ischämischen Myokards beeinflusst. Männliche Sprague-Dawley-Ratten erhielten 28 Tage lang entweder eine Kombination aus verschiedenen Weißweinen und Wasser oder nur Wasser. Nach der Koronarligatur wurden die Tiere 24 Stunden am Leben gehalten. Fünf Bereiche der Myokardwand wurden analysiert (Infarkt/Ischämiezone), drei Peri-Infarkt/Grenzzonen und eine Kontrollzone/Nicht-Ischämiezone, um die Expression der Immunreaktivität für Myeloperoxidase (MPO) zu bestimmen/Neutrophilenmarker und Differenzierungscluster 68 (CD68) - Makrophagenmarker. Eine signifikant geringere Expression sowohl für MPO als auch für CD68 wurde in allen drei Peri-Infarkt-Zonen von Weintrinkern Tieren gefunden ($p < 0,001$). Bei der Expression von Leukozytenmarkern gab es keinen Unterschied zwischen Tieren, die Standard- und polyphenolreichen Weißwein tranken, obwohl für CD68 bei letzterem keine signifikante Abschwächung festgestellt wurde.

Die entzündliche Abschwächung des Weintrinkens war vergleichbar mit der Wirkung der postischämischen Reperfusion oder mit der Wirkung einiger entzündungshemmender Medikamente. Wir schließen daraus, dass der Konsum von Weißwein die entzündliche Infiltration des Peri-Infarkts positiv beeinflusst und wir erwarten, dass dieser Effekt auf spätere Phasen der Infarktheilung übertragen wird.

Unterstützt vom Projekt Nr. 8652 der Kroatischen Wissenschaftsstiftung

L'ESPRESSIONE DEI LEUCOCITI DOPO L'INFARTO MIocardico È MODULATA DAL CONSUMO DI VINO BIANCO

Una legatura coronarica permanente è stata eseguita per determinare come il consumo moderato di vino bianco, con basso e alto contenuto fenolico, moduli l'infiltrazione delle cellule infiammatorie del miocardio ischemico. Gli Sprague-Dawley ratti maschi hanno ricevuto una combinazione di diversi vini bianchi e acqua oppure solo acqua, per 28 giorni. Dopo la legatura coronarica, gli animali vennero tenuti in vita per 24 ore. Cinque aree della parete del miocardio sono state analizzate - zona infarto / ischemica, tre zone peri-infarto / margine e una zona controllo / non-ischemica - per determinare l'espressione di immunoreattività per mieloperossidasi (MPO) - marker di neutrofili e cluster di differenziazione 68 (CD68) - macrofagi marker.

Un'espressione significativamente più piccola per entrambi MPO e CD68 è stata riscontrata in tutte tre zone peri-infartuali di animali che hanno bevuto il vino ($p < 0,001$). Non c'era alcuna differenza nell'espressione dei marcatori leucocitari tra gli animali che bevevano vino bianco standard e vino ricco di polifenoli, sebbene per il CD68 è notata un'attenuazione non significativa nel secondo. L'attenuazione infiammatoria era paragonabile all'effetto della riperfusione post-ischemica o agli effetti di alcuni farmaci antinfiammatori. Concludiamo che il consumo di vino bianco modula positivamente l'infiltrazione infiammatoria peri-infartuale e ci aspettiamo che questo effetto sia trasmesso alle fasi successive della guarigione dell'infarto. Supportato dal progetto della Fondazione Croata per la Scienza no. 8652

2019-2244: PHENOLIC PROFILE AND BIOLOGICAL ACTIVITY OF TABLE GRAPES (VITIS VINIFERA L.)

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Introduction

Grape (*Vitis vinifera* L.) is one of the most commonly produced crops in the world, with approximately 75 million tons produced every year: of them, 45% is used for the production of table grapes, fresh derivatives (e.g. juice), or, alternatively, dried grapes.

Grapes are part of the common diet worldwide and, in recent years, the commercial interest in grape-derived products has grown, due to the decreasing trend of the wine market. This phenomenon is partially a consequence of the WHO position against alcoholic beverages, that are responsible of the increasing misuse/abuse in young people (WHO, 2009).

In addition to the nutritional aspects, fresh grapes are a good source of polyphenols: the peel and pulp of grapes contain mainly anthocyanins (red varieties) and flavonols, while seeds are rich in procyanidins. Although the health-promoting effects of these compounds have been widely investigated, few studies have been performed on their effect on gastric inflammation. Among other factors, Gastric inflammation is a frequent disorder in the general population and in some cases is associated with *H. pylori* infection and oxidative stress.

On this basis, the aim of this study was the characterization of the phenolic pattern from different grape varieties and the in vitro evaluation of the associated antioxidant and anti-inflammatory properties.

Samples

Thirteen table grape and three wine grape varieties were included in the study, the latter used for comparison. Eleven table grapes varieties were from Conegliano Veneto (Italy), and two from Beja (Portugal); wine varieties were from Asti (Italy).

Methods

Grape phenolic profile was characterized by HPLC-DAD-ESI-MSn method: MS and MSn fragmentation data were employed for the structural characterization of phenolic compounds, whereas DAD detection provided their UV-Vis spectra.

After a first screening, the most representative compounds were quantified by HPLC-DAD.

In vitro antioxidant activity was evaluated by using DPPH (1,1-diphenyl-2-picrylhydrazyl) and ORAC (Oxygen Radical Absorbance Capacity) spectrophotometric assays. In parallel, grapes extracts were assayed to evaluate their efficacy in inhibiting Interleukin-8 (IL-8) release from human gastric epithelial cells (AGS) after their treatment with Tumor-Necrosis-alpha (TNF- α) inflammatory stimulus. IL-8 represents one of the most important chemokine released during gastric inflammation.

Results

LC-MS technique and HPLC-DAD analysis allowed to identify and quantify several different classes of phenolic compounds. Among them, the most abundant were: anthocyanins (delphinidin-3-glucoside and malvidin-3-O-glucoside), flavan-3-ols (quercetin-3-glucuronide) and flavonols (procyanidins).

Generally speaking, the polyphenol content was well correlated with the biological activity.

As regards the anti-inflammatory activity, the white seedless Exalta variety was the most active in reducing IL-8 release from AGS cells (IC₅₀=8.48 μ g/mL), followed by the wine variety Albarossa (IC₅₀=6.68 μ g/mL), and the red table grape Red Globe (IC₅₀=14.50 μ g/mL).

Further investigations revealed that the grape portions mostly involved in the biological activity were the peel and the seeds, due to their relative high abundance of anthocyanins and procyanidins, respectively.

Conclusions

The results described in the present study show that the intake of table grapes, in the amount typically consumed in the Mediterranean area, could provide health compounds, that could be active in reducing the oxidative stress and attenuating gastric inflammation.