

VITAMIN C CONTENT AND ANTIOXIDANT VALUES OF GREEN LEAFY VEGETABLES PREDOMINANTLY CONSUMED BY MYOCARDIAL ISCHEMIC PATIENTS IN THE BATTICALOA DISTRICT

U. Mathiventhan^{1*}, R. Sivakanesan² and T. Mahendran³

¹Department of Botany, Faculty of Science, Eastern University Sri Lanka

²Department of Biochemistry, Faculty of Medicine, University of Peradeniya, Sri Lanka

³Department of Agriculture Chemistry, Faculty of Agriculture, Eastern University, Sri Lanka

*umaramanip@yahoo.com

Consumption of fruits and vegetables regularly has been associated with health benefits, but their mechanism has become clear only in recent decades. Fruits and vegetable consumption during every meal reduces cardiovascular disease by 30%. The green leafy vegetables are a rich source of fiber, carotene, vitamin C, various minerals, polyphenols and antioxidants. Therefore this study was an attempt to identify the consumption pattern of Green Leafy Vegetables (GLVs) by Myocardial Ischemic (MI) patients since GLVs are recommended as good sources of antioxidants. In addition, vitamin C (ascorbic acid), total phenolic content (TPC) and total antioxidant activity (TAA) were measured in fresh GLVs consumed regularly for food and medicinal purpose.

MI patients (n= 100) attending the Cardiac Rehabilitation Programme conducted by the Teaching Hospital, Batticaloa were recruited for the study and an interviewer administered questionnaire was used to collect demographic data and consumption pattern. GLVs collected from field were cleaned and aqueous extracts prepared for the estimation of ascorbic acid, TPC and TAA by 2, 6 dichlorophenol indophenol method, Folin–Ciocalteau method and ferric/triipyridyltriazine reduction, respectively.

Thirty one species of GLVs were regularly consumed and average frequency of consumption for food and medicine were nearly 50% and 7%, respectively. Highly consumed GLVs were generally available throughout the year. Sixty one percent of the MI patients consumed GLVs daily. Sixteen species of GLVs were used by more than 50 % of MI patient as food and medicine. *Dregea volubilis*, *Delonix elata*, *Moringa oleifera* and *Sesbania grandiflora* had more than 100 mg vitamin C/ 100 g on fresh weight basis. *Cardiospermum helicacabum*, *D. elata*, *M. oleifera* and *Murraya koenigii* contained more than 200 mg/ 100 g of TPC. With respect to TAA, *M. koenigii* had the highest activity followed by *D. volubilis* and *D. elata*.

Dregea volubilis, *D. elata* and *M. koenigii* were identified as good sources of TAA. Based on Vitamin C, TPC and TAA, *D. volubilis*, *D. elata* and *M. koenigii* were identified as the promising GLVs but their consumption for food was 75%, 44% and 97% respectively. *Moringa. oleifera* which was consumed by 97 % of the MI patients is a good source of vitamin C and TPC but was a poor source of TAA. Similarly *S. grandiflora*, consumed by 71% of MI patients, was a good source of vitamin C and TPC but a poor source of TAA. *D. volubilis*, *D. elata* and *M. koenigii* were identified as the promising GLVs.