

# Perubahan kadar vitamin C plasma dan faktor-faktor yang berhubungan pada pasien stroke iskemik = The changes of vitamin C plasma level and associated factors in stroke ischemic patients

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## Abstrak

### Tujuan Penelitian

Untuk mendapatkan data perubahan kadar vitamin C plasma dan faktor-faktor yang berhubungan pasien stroke iskemik

### Tempat Penelitian

Ruang rawat inap B Rumah Sakit Umum Pusat Nasional Dr. Cipto Mangunkusumo

### Desain Penelitian

Penelitian dengan desain cross sectional dilakukan pada 29 pasien stroke iskemik dengan onset kurang dari 48 jam. Pengambilan subyek penelitian dengan Cara consecutive sampling. Pemeriksaan vitamin C dengan metode spektrofotometri. Data yang dikumpulkan meliputi: karakteristik demografi, faktor risiko, pola makan, asupan nutrisi berdasarkan recall 1 x24 jam, food frequency amount (FFA) dan food record, pemeriksaan antropometri (BB, TB), pemeriksaan klinis dengan National Institutes of Health Stroke Scale (NIHSS)

### Subyek Penelitian

Jumlah subyek penelitian 29 orang (22 laki-laki dan 7 perempuan). Rerata usia  $60 \pm 10,1$  tahun. Sebanyak 56,7% mempunyai pola makan kurang. Asupan vitamin C selama observasi di bawah angka yang dianjurkan ( $55,8 \pm 15,4$  mg/dL ;  $54,2 \pm 14,2$  mg/dL ;  $56,1 \pm 15,6$  mg/dL ;  $53,8 \pm 16,7$  mg/dL) Berdasarkan FFA dan recall terdapat korelasi positif bermakna antara kadar vitamin C plasma dengan asupan vitamin C ( $r: 1,42 - 0,43$ ,  $p < 0,05$ ). Berdasarkan food record terdapat korelasi positif cukup antara kadar vitamin C plasma dengan asupan energi ( $r: -0,33 - 0,35$ ,  $p > 0,05$ ), dan asupan protein ( $r: 0,32 - 0,35$ ,  $p > 0,05$ ). Korelasi positif bermakna antara kadar vitamin C plasma dengan asupan vitamin C ( $r: 0,39 - 0,43$ ,  $p < 0,05$ ). Kadar vitamin C plasma perokok lebih rendah dibandingkan non perokok. Perubahan kadar "vitamin C plasma tidak berbeda menurut jenis kelamin ( $p > 0,05$ ). Demikian pula kadar kadar vitamin C plasma menurut usia ( $p > 0,05$ ). Tidak terdapat perubahan bermakna nilai NIHSS ( $9,8 \pm 6,9$  ;  $9,8 \pm 7,1$  ;  $9,5 \pm 7,1$  ;  $9,3 \pm 7,6$ ). Antara kadar vitamin C plasma dengan nilai NIHSS terdapat korelasi negatif ( $r: 0,28 - -0,34$ ,  $p > 0,05$ ).

### Hasil Penelitian

Penelitian ini menunjukkan terdapat perubahan kadar vitamin C plasma pasien stroke iskemik. Penurunan bermakna kadar vitamin C plasma hari ke 3 dan 5 terhadap kadar vitamin C plasma hari pertama. Persentase asupan energi, protein, serat dan vitamin C masih di bawah kebutuhan. Terdapat korelasi negatif antara kadar vitamin C plasma dengan nilai NIHSS.

<hr><i>Objective

To investigate the changes of vitamin C plasma level and associated factors in stroke ischemic patients.

Place IRNA B, Cipto Mangunkusumo General Hospital, Jakarta

### Methods

A cross sectional study was carried out among 29 patient with ischemic stroke of recent onset (< 48 hours). Consecutive sampling method was used to obtain the subject. Plasma vitamin C level was measured using spectrofotometry. Data collected were demographic characteristics include, risk factors, pattern food, nutrition intake using 24 hours recall, FFA and food record food, antropometri assessment, neurology examination using NIHSS.

### Result

The subject consist of 29 patients (20 males and 6 females) with mean of age was  $60 \pm 10,1$  years. There were 56,7% have less dietary profile. Vitamin C intake during observation was under recommendation ( $55,8 \pm 15,4$  mg/di. ;  $54,2 + 14,2$  mg/dL ;  $56,1 \pm 15,6$  mg/dL ;  $53,8$  f  $16,7$  mg/dL). Based on FFA and recall, there was significant positive correlation between vitamin C plasma level with intake of vitamin C ( $r = 0,42 - 0,43$   $p < 0,05$ ). Based on record, there was positive correlation between the level of vitamin C plasma level with energy intake ( $r = 0,33 - 0,35$   $p > 0,05$  ), and protein intake ( $r = 0,32 - 0,35$   $p > 0,05$ ). There was significant correlation between level of vitamin C plasma with vitamin C intake ( $r = 0,39 - 0,43$ ,  $p < 0,05$ ) The plasma vitamin C level of smoker lower than non smoker patients. There was no relationship between vitamin C plasma level and sex ( $p > 0,05$ ), age ( $p > 0,05$ ). During the observation there were no significant difference in score of NIHSS ( $9,8 \pm 6,9$  ;  $9,8 \pm 7,1$  ;  $9,5 \pm 7,1$  ;  $9,3 \pm 7,6$  ). There was negative correlation between the level of vitamin C plasma and NIHSS score, as follows ( $r = -0,28 - -0,34$ ,  $p > 0,05$ ).

### Conclusion

This study showed that there were changes in the level of the vitamin C plasma of ischemic stroke patient. There was significant decrease in plasma vitamin C level between the third and fourth days and at admission. The percentage of energy, protein, fiber and vitamin C intake under the recommendation. There was negative correlation between NIHSS and vitamin C plasma level.