



1st International Conference on Health Sciences October 28-29, Yogyakarta Indonesia Carbamazepine For Neuropathic Pain In Yogyakarta



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ABSTRACT

Introduction. In Indonesia, carbamazepine has been permitted by The National Agency of Drug and Food Control Indonesia (NA-DFC) Indonesia for the prophylaxis of manic-depressive disorder unresponsive to lithium, all kinds of epilepsy (except petit mal) and trigeminal neuralgia. Moreover, Carbamazepine is also used for neuropathic pain and psychiatric diseases. Carbamazepine is the first anticonvulsant that was investigated for neuropathic pain, especially trigeminal neuralgia. However, the use of this drug for neuropathic pain (excluding trigeminal neuralgia) has not yet been permitted by NA-DFC Indonesia.

Aim. The aim of this study is to investigate the use of carbamazepine for neuropathic pain in Yogyakarta.

Method. The study was conducted through an observational study with retrospective data collection. Data were obtained from four hospitals in Yogyakarta, namely Dr. Sardjito Hospital, UGM Academic Hospital, PKU Muhammadiyah Yogyakarta Hospital and Bethesda Hospital in Yogyakarta. Identification of the use of carbamazepine for neuropathic pain is done by tracing through the medical records of patients prescribed with carbamazepine during 2014.

Results. Based on the results, the use of carbamazepine in 2014 were 704 prescriptions, which 453 (64.35%) were prescribed for indications permitted by NA-DFC, 149 prescriptions (21.16%) for neuropathic pain, 83 prescriptions (11.78%) for nociceptive pain, and 19 prescriptions (2.70%) for other indications. Five major indications of carbamazepine prescription in neuropathy pain is for stroke 35 (23.49%) of 149 prescribing, painful diabetic neuropathy 25 (16.78%), cancer pain 18 (12.08%), herniated nucleus pulposus (HNP) 12 (8.05%), and traumatic cerebral oedema 8 (5.37%).

Conclusion. The use of carbamazepine for neuropathic pain in Yogyakarta was seen in 149 prescriptions (21.16%), with five major indications were a stroke, painful diabetic neuropathy, cancer pain, HNP and traumatic cerebral oedema.

Keywords : Carbamazepine, indications, neuropathic pain, Yogyakarta

METHODS

an observational study with retrospective data collection

Data obtained from carbamazepine prescription during 2014, derived from four hospitals in Yogyakarta, namely Hospital Dr. Sardjito, UGM Academic Hospital, PKU Muhammadiyah Hospital and Bethesda Hospital.

Identification of the use of carbamazepine done by checking the diagnoses listed in medical records at the date of carbamazepine prescription

RESULTS

704 prescription :

- 453 (64,35%) prescribed according to NA-DFC Indonesia indication registered in 2014.
- 251 (35.65%) are prescribing off-label : 149 prescriptions (21.16%) for neuropathic pain, 83 prescriptions (11.79%) for nociceptive pain, and 19 prescriptions (2.70%) for other

Table 1. The indications for neuropathic pain uses of carbamazepine in 2014

No	Indication	Amount	Percentage
Neuropathic Pain			
1	Stroke	35	23,49
2	DM neuropathy	25	16,78
3	Ca pain	18	12,08
4	HNP	12	8,05
5	Traumatic cerebral oedema	8	5,37
6	Herpes zoster	7	4,70
7	Post operate	6	4,02
8	Polyneuropathy	6	4,02
9	LBP	5	3,35
10	Neuropathic syndrome	5	3,35
11	Vertigo	5	3,35
12	Myalgia	5	3,35
13	Ischialgia	2	1,34
14	Fibromyalgia	2	1,34
15	Cervical syndrome	2	1,34
16	Paraparese	2	1,34
17	Adhesive capsulitis of shoulder	1	0,67
18	Trigger finger	1	0,67
19	Fraktur	1	0,67
20	Tetraparese	1	0,67
Total		149	100

Table 2. The others uses of carbamazepin in 2014

No	Indication	Amount	Percentage
Nociceptive Pain			
1	Personal history of the circulatory system	30	36,14
2	Cephalgia	15	18,07
3	Pain in joint	6	7,22
4	OA	5	6,02
5	Parkinson	3	3,61
6	HD/ginjal	2	2,41
7	Bell palsy	2	2,41
8	Observation suspect disease and condition	2	2,41
9	CHF	2	2,41
10	CP	2	2,41
11	Canal stenosis	2	2,41
12	Asma bronchial attack	2	2,41
13	Hiponatremia, hipokalemia	2	2,41
14	HT, hiperlipid	1	1,20
15	Chronic obs pulmonary	1	1,20
16	Abnormalitas of heart beat	1	1,20
17	Chest pain	1	1,20
18	Periodic limb movement disorder	1	1,20
19	Abdomen pain with vomiting	1	1,20
20	Impaksi, afoksi	1	1,20
21	Dyspepsia	1	1,20
Subtotal		83	100
Psychosis			
22	Schizophrenia	7	36,84
23	Personal history of other mental and behavioural disorder	1	5,26
24	Insomnia	1	5,26
Infection			
25	Encephalitis	6	31,56
26	Pharyngitis, stomatitis	2	10,53
27	Cellulitis	1	5,26
28	CMV	1	5,26
Subtotal		19	100

Carbamazepine For Neuropathic Pain

Research the use of carbamazepine for neuropathic pain other than trigeminal neuralgia already been done with evidence level low and very low (3,6,7). Only one study assess the efficacy of carbamazepine in the central post-stroke pain. (7). Research on the use of carbamazepine for painful diabetic neuropathy (10-13)

INTRODUCTION

Carbamazepin anticonvulsant (1)

The first anticonvulsant investigated for neurophatic pain (2)

Almost all anticonvulsants have an anti-pain effect in some types of neuropathic pain (3,4)

Recommended anticonvulsant was gabapentin, pregabalin, carbamazepine and oxcarbazepine (5).

In Indonesia license by NA-DFC : prophylaxis of manic-depressive diseases unresponsive to lithium, antiepileptics, epilepsy all kinds, except petit mal, and trigeminal neuralgia.

How about the use of carbamazepine in Yogyakarta?

Mechanisms for neuropathic pain block sodium channels (4,6)

Mechanisms for nociceptive :
1. intervention in -aminobutyric acid (GABA) -ergic and somatostatinergic
2. blocking calcium channels and excitatory amino acids (7,8)

some studies of the use of carbamazepine on trigeminal neuralgia, painful diabetic neuropathy and post stroke pain (9).

CONCLUSIONS

The use of carbamazepine for neuropathic pain in Yogyakarta was seen in 149 prescriptions (21.16%), with five major indications were stroke, diabetic neuropathic pain, cancer pain, HNP and traumatic cerebral oedema.

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