Trend of fluoroquinolone resistance in Thai new pulmonary tuberculosis patients

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Fluoroquinolones are broad spectrum antibiotics which have activities against most respiratory pathogens including tuberculosis. The widely use of fluoroquinolones in respiratory tract infections made it unavoidable for undiagnosed tuberculosis (TB) patients to expose against fluoroquinolones. So it is likely for tuberculosis to develop increasing resistance when fluoroquinolones were used for long period of time. The aim of this study was to determine trend of fluoroquinolone resistant tuberculosis in Thai pulmonary tuberculosis patients for planning of appropriated use of fluoroquinolones in treatment of drug resistant tuberculosis.

Method : Study was conducted at TB laboratory, Department of Pathology, Cenrtral Chest Institute of Thailand(CCIT). The log books of TB drug susceptibility test (DST) were reviewed. Only first DST results of every new TB patients were included in the study and classified according to calendar year. Because TB laboratory of CCIT had included ofloxacin and kanamycin in panel of first line drugs since 1997, but in this study was considered results only in the past 10 years.

Results : Trend of fluoroquinolone resistance in new Thai tuberculosis patients was not increasing and MDR-TB had a declining trend in this study.

Year	No.	Resistant Rate against each anti-TB drugs (%)				
		INH	RMP	MDR	FQ	KM
2004	1341	12.00	13.34	7.68	2.68	1.04
2005	1143	12,68	9.45	5.69	1.22	1.14
2006	1172	15.70	9.56	5.29	1.11	0.68
2007	995	15.88	8.54	5.43	1.41	0.0
2008	751	15.98	9.32	8.12	2.53	1.60
2009	812	13.79	8.74	7.64	3.08	1.85
2010	891	6.40	7.18	3.48	6.73	1.23
2011	910	6.15	5.82	1.65	3.19	2.31
2012	944	11.55	8.16	4.66	1.48	1.06
2013	837	14,81	7.17	4.06	2.39	1.55

INH=Isoniazid, RMP=Rifampicin, MDR=Multidrug resistant, FQ=Fluoroquinolone
KM=Kanamycin

Conclusions : There was not increasing trend of fluoroquinolone resistant TB in Thai pulmonary tuberculosis patients. Initial resistant rate of Kanamycin was low. So fluoroquinolones and Kanmycin are benefit as core drugs in empiric treatment regimen for MDR-TB treatment in Thailand.

Keywords : fluoroquinolones, kanamycin, tuberculosis,