AN INTERVENTION IN AN ANTIBIOTICS DISTRIBUTION SYSTEM: UNIT-DOSE VS BULK EVALUATION IN A COUNTY HOSPITAL

Marinos Petrogonas, Eleni Rinaki, Leonidas Tzimis
Pharmacy Department, "Agios Georgios" Chania General Hospital, Crete, Greece

Background

"Agios Georgios" Chania General Hospital (**CGH**) in the island of Crete has 460 beds. It is a medium sized public hospital, that supports the 150.000 inhabitants.

Until August 2010, restricted-use antibiotics only were distributed as unit doses; the rest were distributed in bulk.
Since September 2010 all antibiotics are administered in a unit dose – patient base.

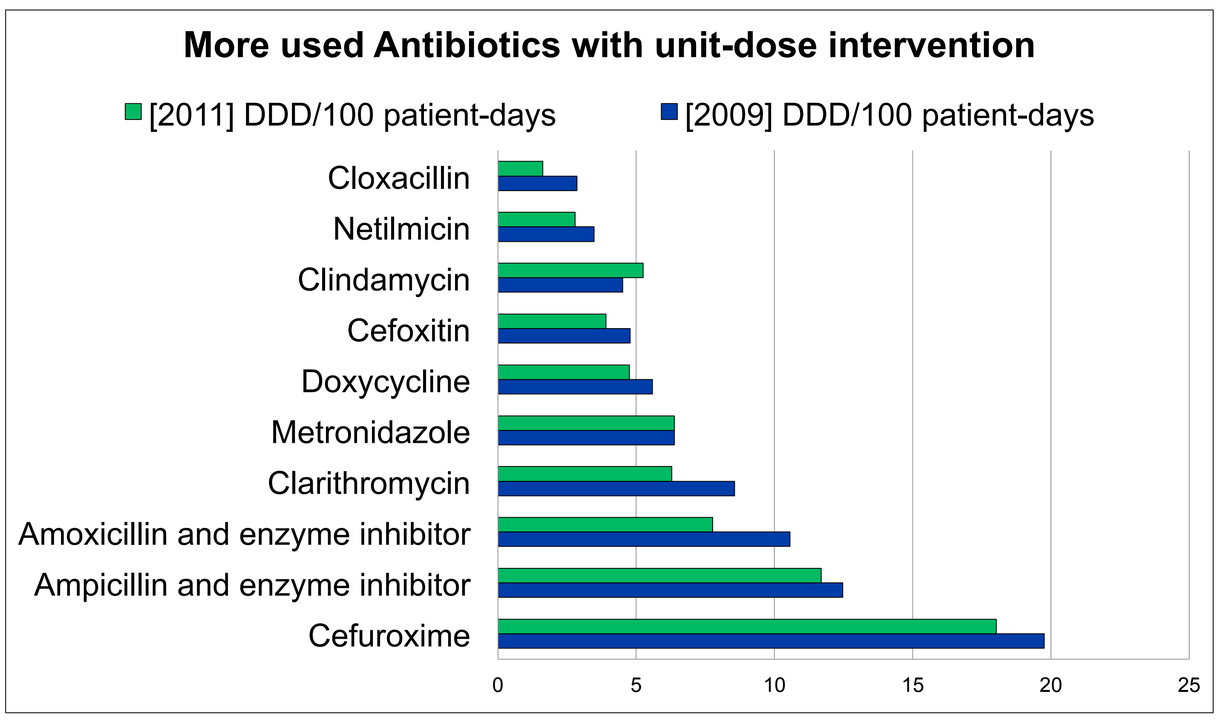
Purpose

The aim of this study is to evaluate the effect of this intervention on antibiotics' administration.

Material and methods

We studied the amount of antibiotic substances, expressed in DDDs/100 patient-days, for years 2009 and 2011.
Antibiotics were classified according to ATC system, excluding J05, J06 and J07. The mean administration of the year before and the year after were tested for statistical significance using paired-sample t test. Difference in use for each antibiotic was tested by Bonferroni t test.

All antibiotics, according to ATC	2009 DDD/ 100 patient-days	2011 DDD/ 100 patient-days
Tetracyclines (J01A)	7.18	6.44
Beta-lactams penicillins (J01C)	35.48	30.45
Other betalactam antibacterials (J01D)	39.55	41.06
Sulfonamides and trimethoprim (J01E)	0.43	0.57
Macrolides, lincosamides and streptogramins (J01F)	16.38	14.29
Sum (J01B, J01G,and J01R)*	5.42	4.51
Quinolones (J01M)	23.60	20.69
Other antibacterials (J01X)	19.16	22.28
Antimycotics for systemic use	3.69	3.92
Antimycobacterials	2.38	1.49
Total	153.28	145.70



Results

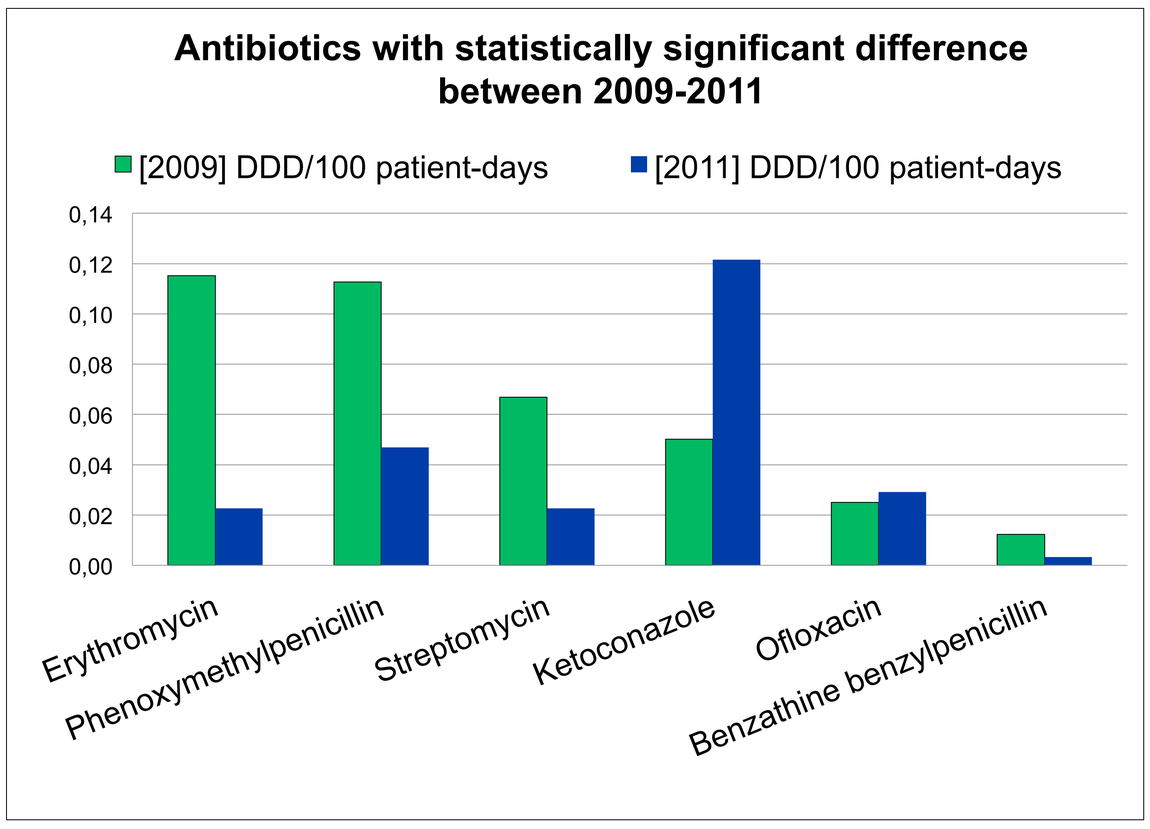
In total, in 2009 71 antibiotics were used (153.28 DDDs/ 100patient-days) while in 2011 64 (145.31 DDDs/100 patient-days): mean difference was not statistically significant (t=0.78, p=0.44).

36 of antibiotics were administered in both years (mean difference in DDDs/100 patient-days: 0.38, statistically significant, t= 2.91, p=0.0063).

In 16 of these antibiotics, the use of which was more than 1 DDD/100 patient-day, mean difference was not statistically significant (difference: 0.69, t=2.56, p=0.22).

When Bonferroni t test was applied for each antibiotic, statistically significant difference was observed for 6 low prescribed antibiotics (DDD/100 patient-day < 1): erythromycin, phenoxymethylpeniciline, streptomycin, ketoconazole, ofloxacin and benzathinbenzylpenicilline.

Antibiotics where unit-dose intervention applied, according to ATC	2009 DDD/ 100 patient-days	2011 DDD/ 100 patient-days
Tetracyclines (J01A)	5.58	4.75
Beta-lactams penicillins (J01C)	30.36	24.41
Other betalactam antibacterials (J01D)	0.00	0.00
Sulfonamides and trimethoprim (J01E)	0.43	0.57
Macrolides, lincosamides and streptogramins (J01F)	16.38	14.29
Sum (J01B, J01G,and J01R)*	5.42	4.51
Quinolones (J01M)	0.05	0.03
Other antibacterials (J01X)	7.52	6.41
Antimycotics for systemic use	1.81	2.82
Antimycobacterials	2.38	1.49
Total	96.09	82.56



Email : pharmacy@chaniahospital.gr

20th Congress of the EAHP
25-27 March 2015
Hamburg, Germany

Abstract number: **DD-002**

Conclusions

Unit dose intervention lead to a statistically significant reduction in the use of specific antibiotics, although it did not proved statistically significant for antibiotics of DDD/100 patient-day>1.

Significant difference was only observed in low prescription antibiotics, which could be justified by the small number of patients.

Nevertheless, all antibiotics are still distributed in a unit dose system in hospitalized patients as it contributes decisively to pharmaceutical patients' care and records.