Russian study on the usefulness of point-of-care-testing for CRP in lower respiratory tract infection/acute cough

(including acute bronchitis, pneumonia, infectious exacerbations of COPD or asthma, and when one of these diseases can be suspected due to coughing)

Elena Andreeva, Hasse Melbye***

**Northern State Medical University, Arkhangelsk, RF*

***Tromso University, Norway*

Aim

- *Evaluation of the effect of using the CRP test in general practice patients with lower respiratory tract infection on the use of antibiotics and the outcome of the patients*

Methods: Setting

- *9 General Practice offices in Arkhangelsk*
- *9 General Practice offices in Murmansk*

Time schedule

Baseline study: 8 weeks – autumn 2009

Two registrations: first consultation for current illness episode, second - after two weeks

Clinical trial: 12 weeks – winter-spring 2010, two registrations

Inclusion criteria

- *aged 18 years and over*
- *an illness where a acute or worsened cough is the main or dominant symptom or a clinical presentation suggesting LRTI less then 28 days duration*
- *first consultation for this illness episode*
- *seen in physician office*
- *first time in this study*
- *ability to fill out study materials*
- *written consent to participate*

Sample size

Baseline study: *52 patients in Arkhangelsk and 46 in Murmansk (98 in total)*

Clinical trial:

- *Intervention group: 101 patients from GP offices in Arkhangelsk and Murmansk, CRP was taken in all patients.*
- *Control group: 99 patients from GP offices in Arkhangelsk and Murmansk*

Design

Open clinical trial with control group and comparison before and after intervention

Examinations

Mandatory:

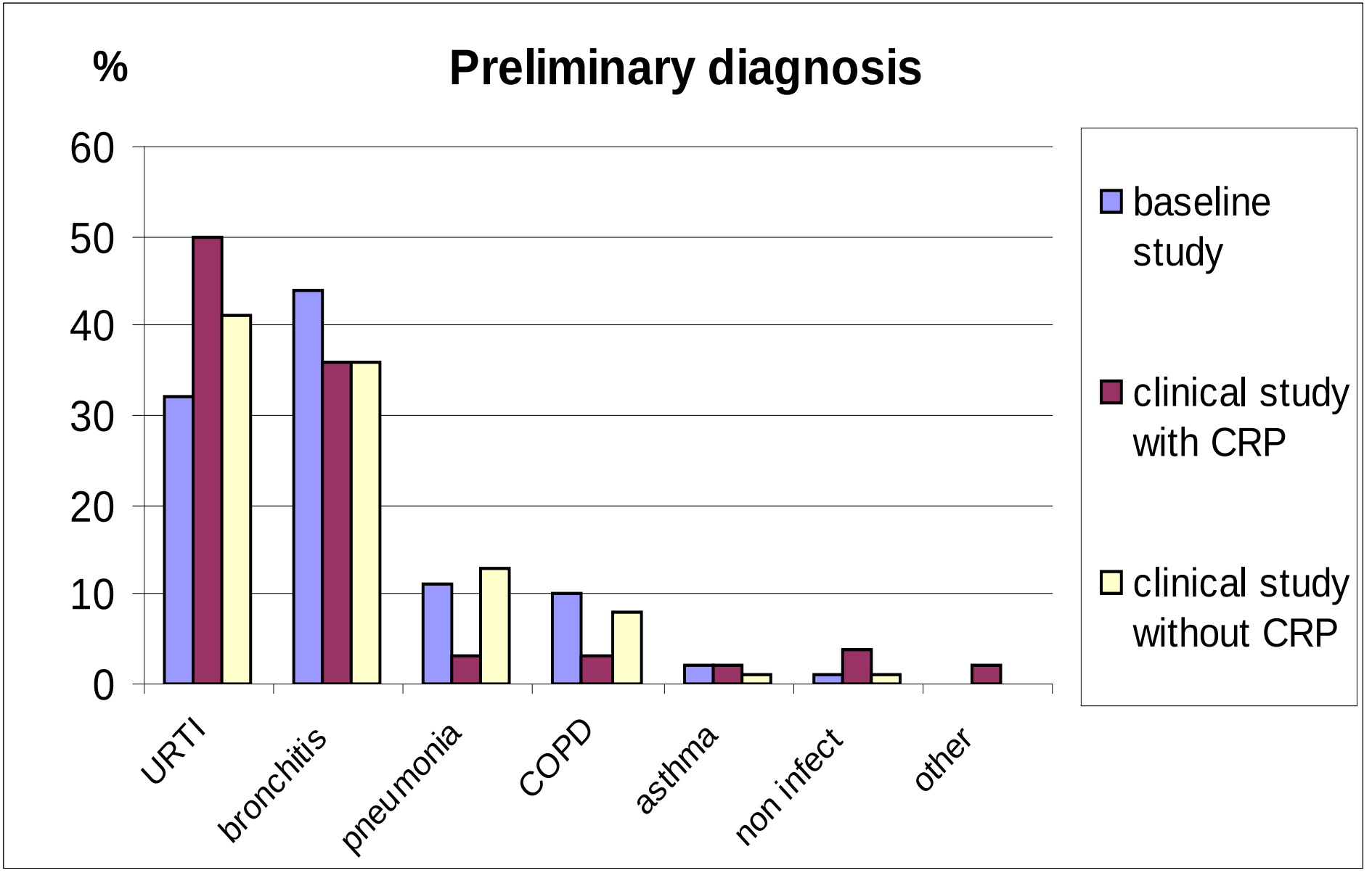
- *Questionnaire*
- *clinical examination*
- *full blood count*

Optional:

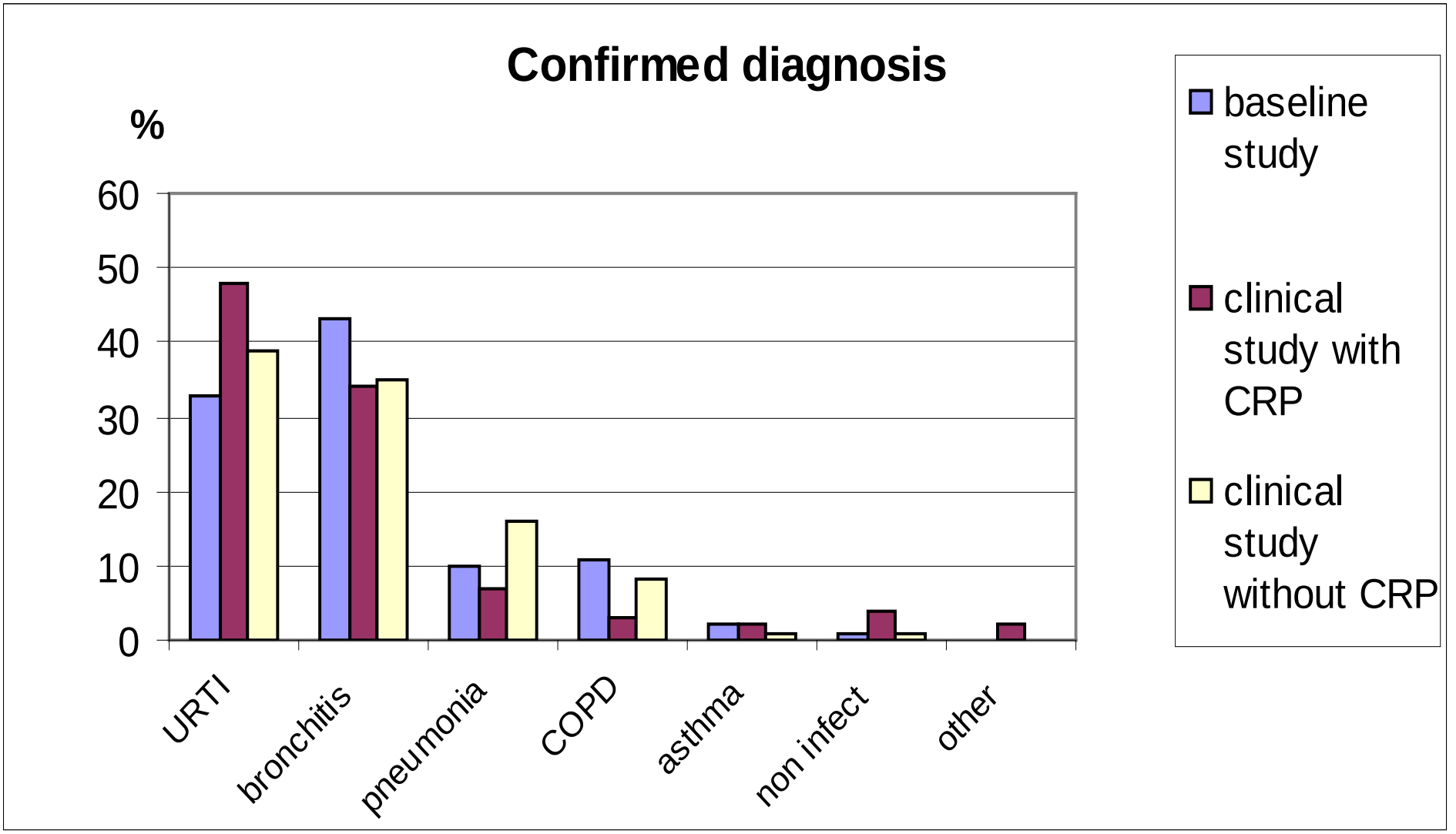
- *chest x-ray*
- *spirometry*

CRP-test

- *Afinion test system (Axis Shield)*
- *The result was available during 3 min*



**For all groups preliminary diagnosis were based on clinical examination, for CRP group – combine with CRP results*



**For all groups confirmed diagnosis were based on chest X-ray (if needed), for CRP group – combine with CRP results*

CRP test


C
Insert cartridge
afinion
AS100


Tear strip
Handle
Afinion™ CRP
afinion
CRP
TEST CARTRIDGE
IVD
LOT
22334455
2005-12
CRP

CRP test:
Upper respiratory tract infections

- Total 49 patients
- CRP<8 mg/l – 40 patients (82%)
- CRP 8-20 mg/l – 5 patients (10%)
- CRP 20-50 mg/l – 4 patients (8%)

CRP test:
Acute bronchitis

- Total 34 patients
- CRP<8 mg/l – 16 patients (47%)
- CRP 8-20 mg/l – 9 patients (26%)
- CRP 20-50 mg/l – 7 patients (21%)
- CRP>50 mg/l – 2 patients (6%) (56 and 159 mg/l)

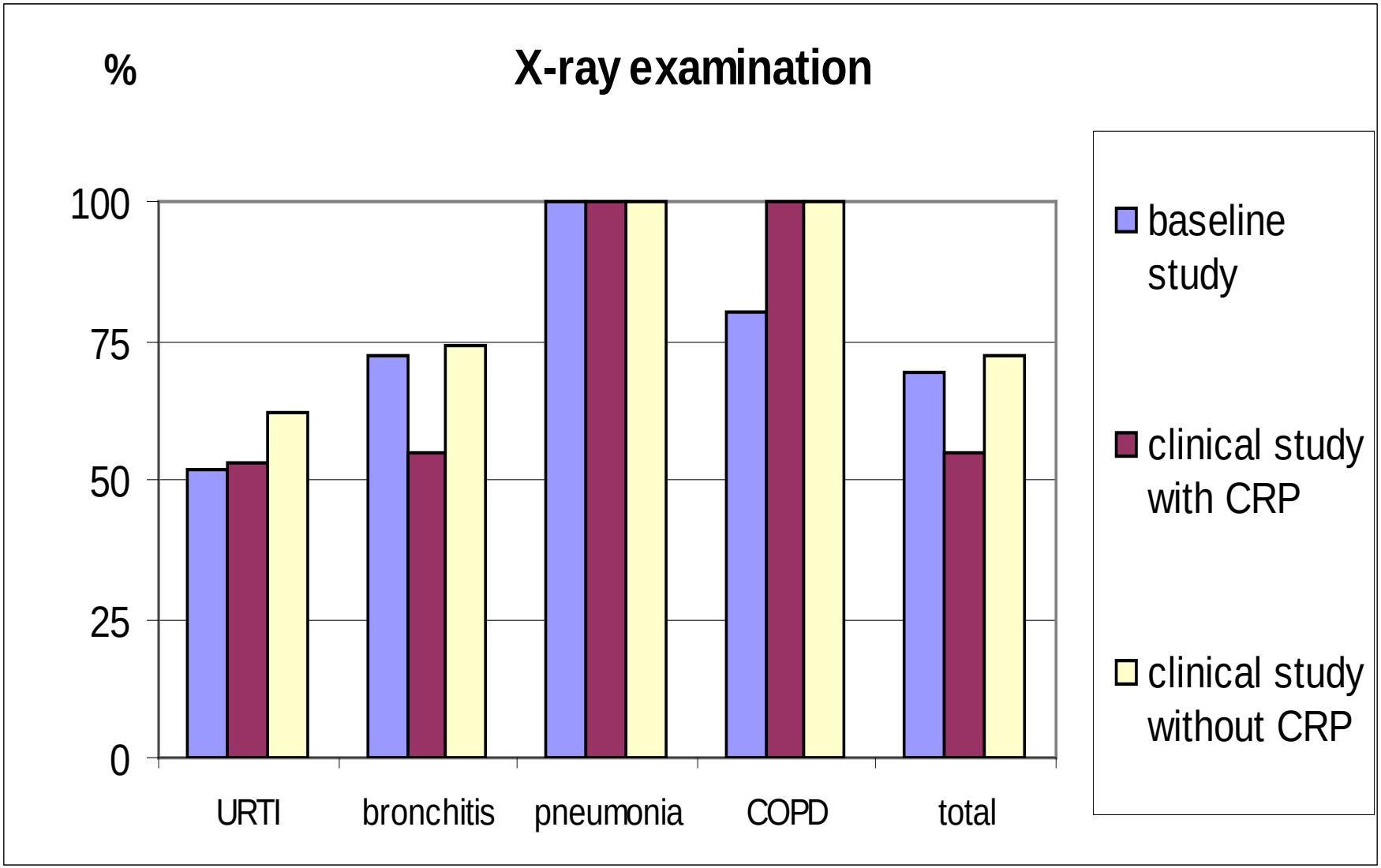
CRP test:
Pneumonia and COPD

Pneumonia: Total 7 patients

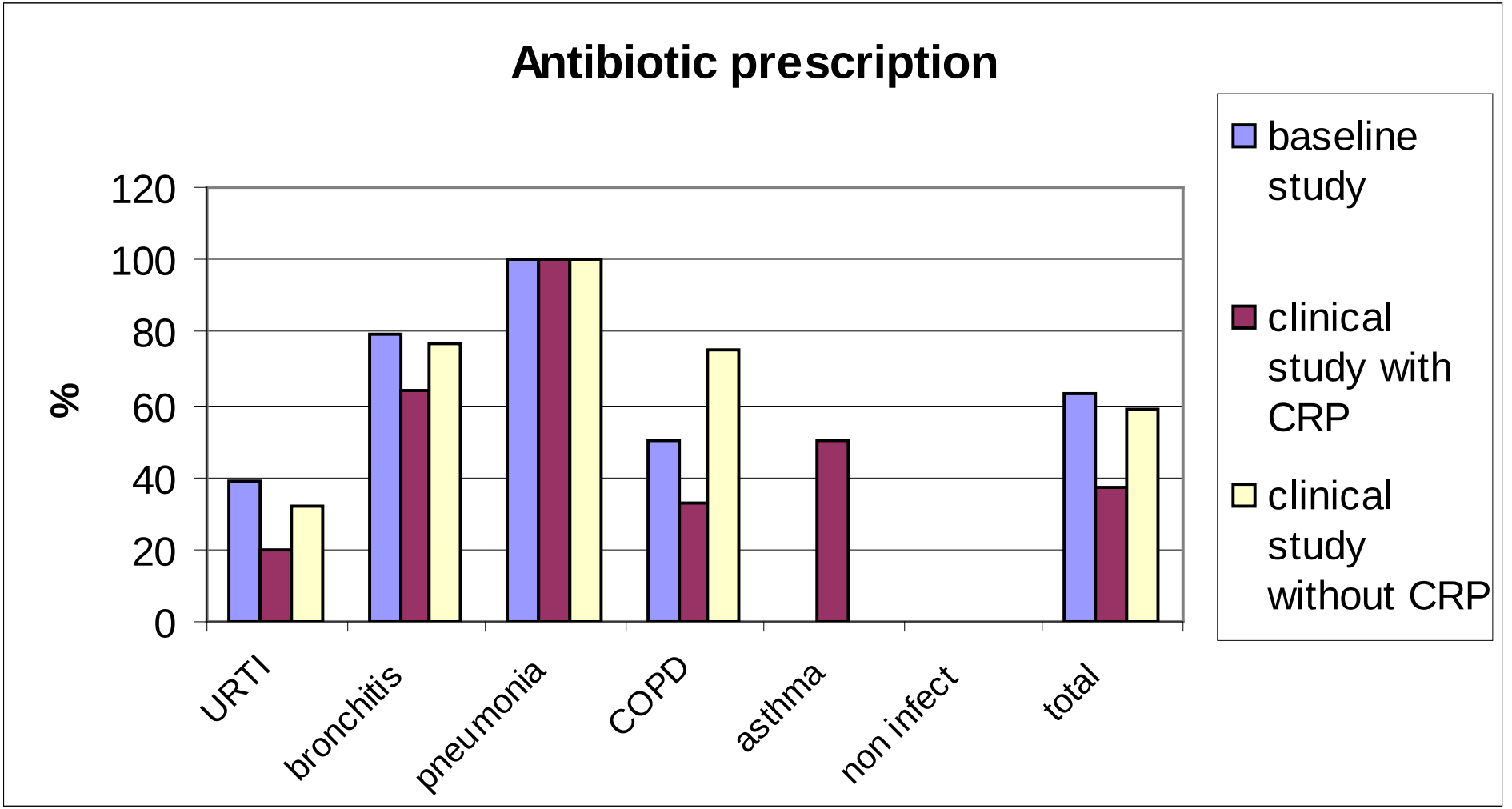
- CRP range 46-92 mg/l, mean 67.3 mg/l

COPD: Total 3 patients

- CRP<8 mg/l – all patients



**For all groups chest X-ray was performed for confirmation of preliminary diagnosis*



**Antibiotics were prescribe in confirmed diagnosis*

Baseline and clinical studies
Antibiotics taken during 2 weeks

	Baseline	Clinical with CRP	Clinical without CRP
Total	**72%**	**41%***	**66%**
2 courses of antibiotics	7%	5%	7%
3 courses of antibiotics	1%	-	-
Change antibiotics	5 cases (7%)	5 cases (12%)	11 cases (17%)
Inc: Allergy	-	2 cases	2 cases
Inc: Non-effective	4 cases	3 cases	7 cases
Inc: Result of sputum for culture	1 case	-	2 cases

Conclusion

	Baseline	Clinical with CRP	Clinical without CRP
X-ray	**69%**	**55%***	**72%**
Antibiotics	**72%**	**41%***	**66%**
Reconsultations: Patient consultations with the GP within 2 weeks	3.61	3.38	3.63
Complications: need of hospitalization, or the condition is the same or worse after 2 weeks.	6%	2%	-
Rate of recovery: the percentage who state recovery or almost recovery after 2 weeks.	88%	93%	94%

* $p < 0.05$

The best antibiotic is one that has not been prescribed