

***Sputum culture & drug sensitivity
pattern of community acquired
pneumonia in diabetic patients and
their correlation with glycemic status***

**Ahmed JU¹ Hoque Tarif², Hossain D³,
Musa AKM⁴, Uddin KN⁵**

1. Registrar, Internal Medicine & Pulmonology, BIRDEM
2. Medical officer, Internal Medicine & Pulmonology, BIRDEM
3. Assistant Professor, Internal Medicine & Pulmonology, BIRDEM
4. Associate Professor, Internal Medicine & Pulmonology, BIRDEM
5. Professor of Medicine, BIRDEM

Background

- Diabetes Mellitus is an immunosuppressive state leading to increased susceptibility to various infections including pneumonia.
- Pneumonia in diabetic patients is often atypical, caused by more virulent organisms and associated with increased antibiotic resistance.

Aims & objectives

- To see the microorganisms most commonly causing community acquired pneumonia in diabetic patients.
- To see the antibiotic sensitivity pattern of the organisms.
- To correlate the organisms with glycemic status
- To recommend empirical treatment regimen for diabetic patients

Inclusion criteria

- Diabetic patients
- Community acquired pneumonia
- Sputum culture positive for bacterial growth

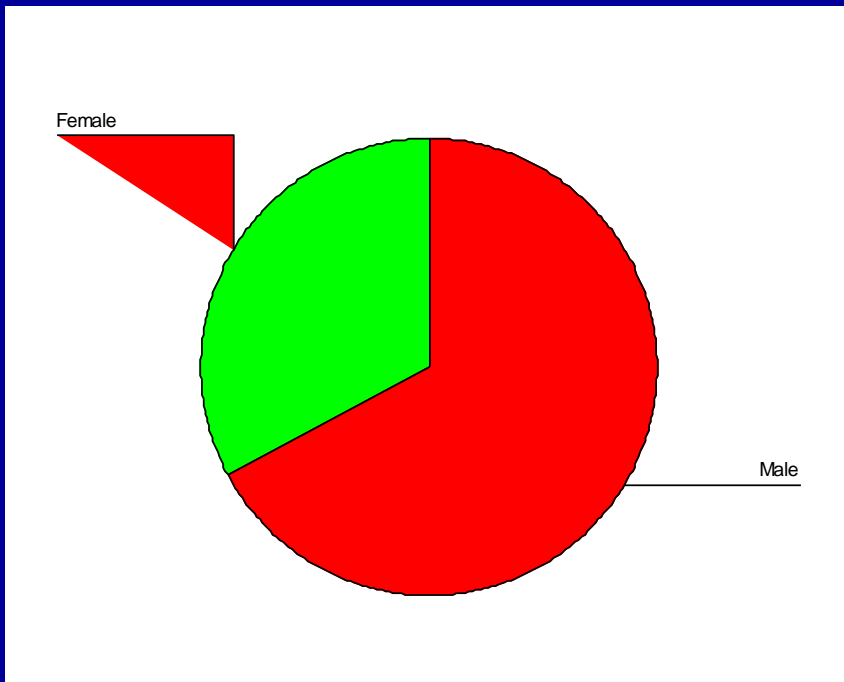
Exclusion criteria

- Nosocomial pneumonia
- Ventilation associated pneumonia
- Patients on immunosuppressive agents
- Patients with ESRD

Methodology

- Study design: *Cross-sectional study*
- Place of study: *Department of Internal Medicine & Pulmonology of BIRDEM Hospital*
- Time of Study: *January 2008 – December 2009*
- Study population: *Hospitalized diabetic patients*

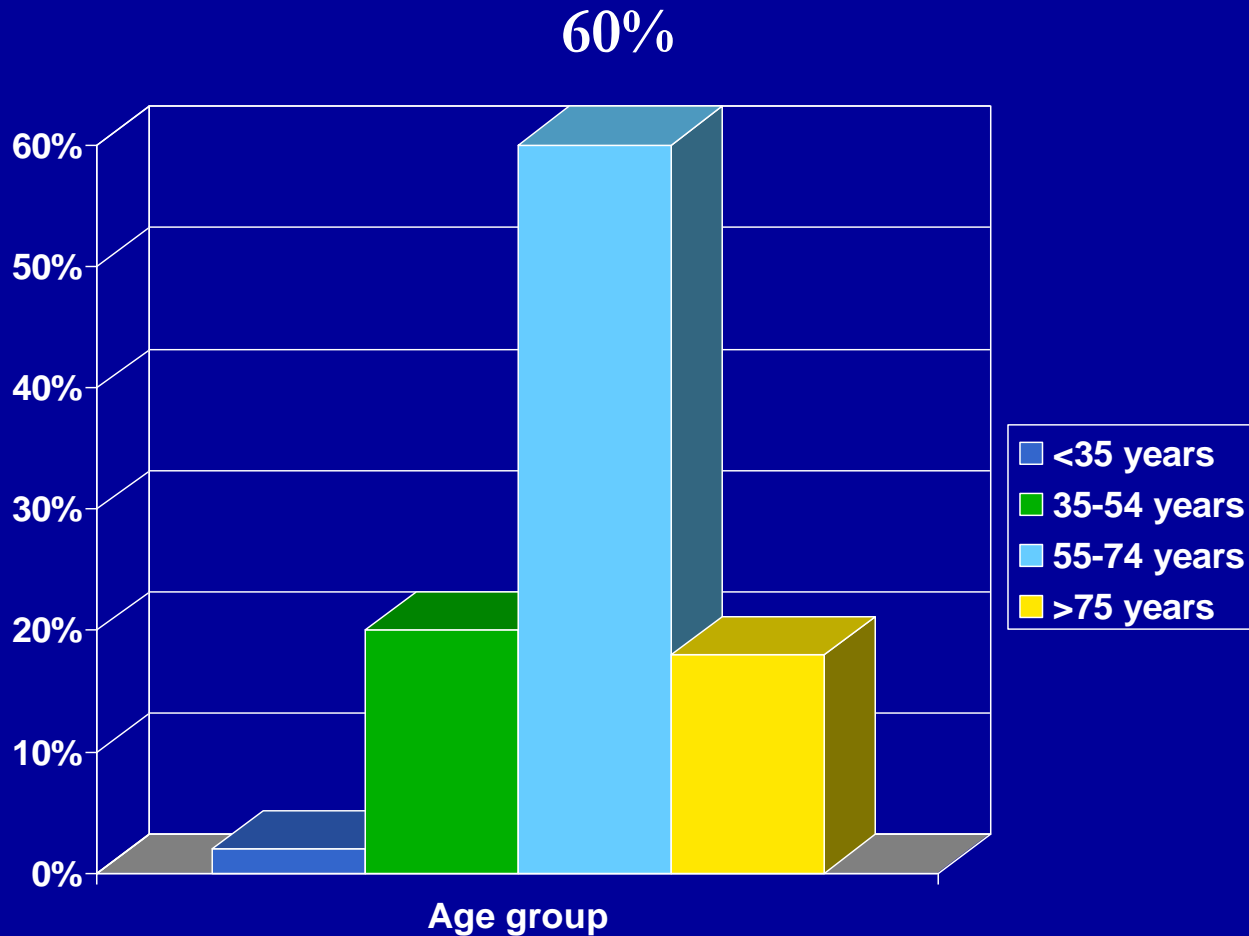
Results



- **Total patients - 112**
- **Of them 82 (67%) were male, 40 (33%) were female.**

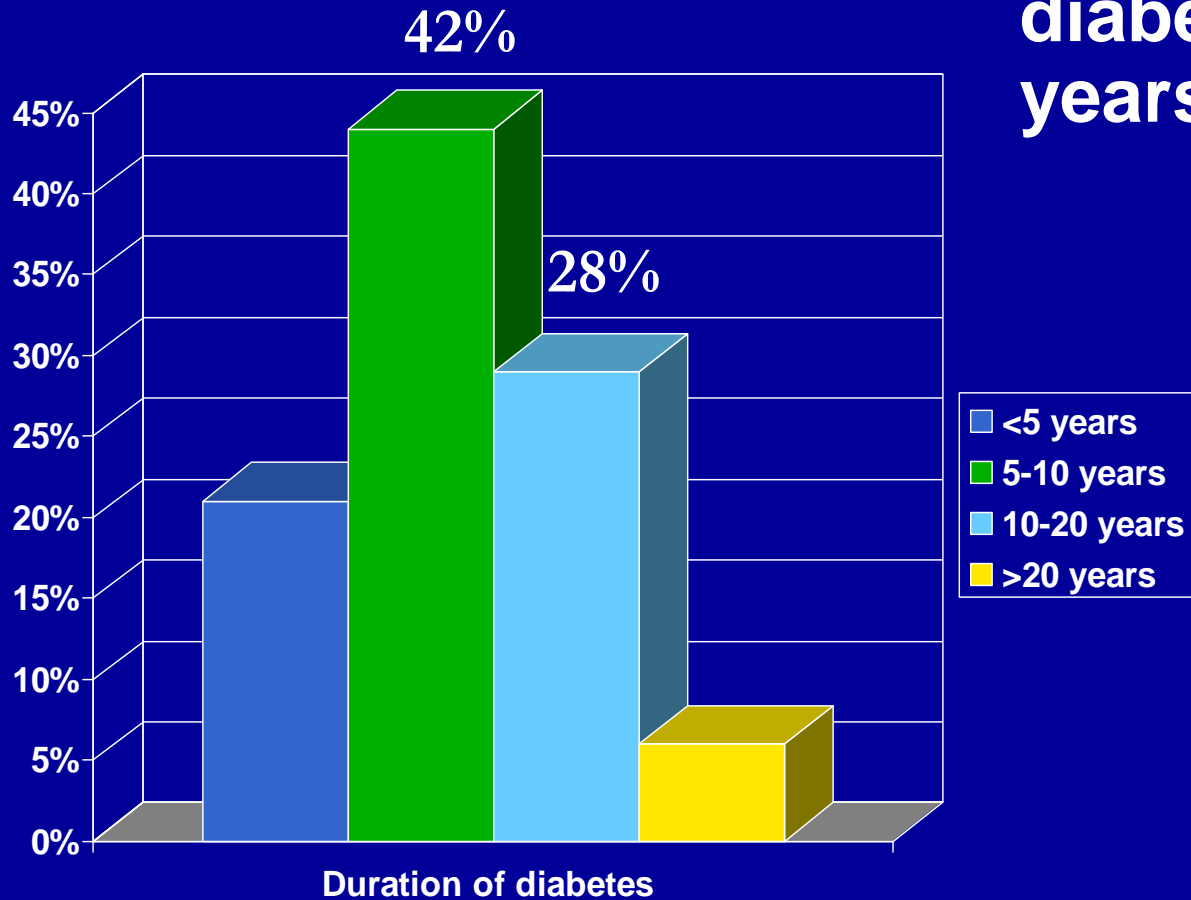
Age distribution of patients

Mean age: 60.79 ±11 years



Distribution of duration of diabetes

Mean duration of diabetes – 7.33 ± 1.2 years.

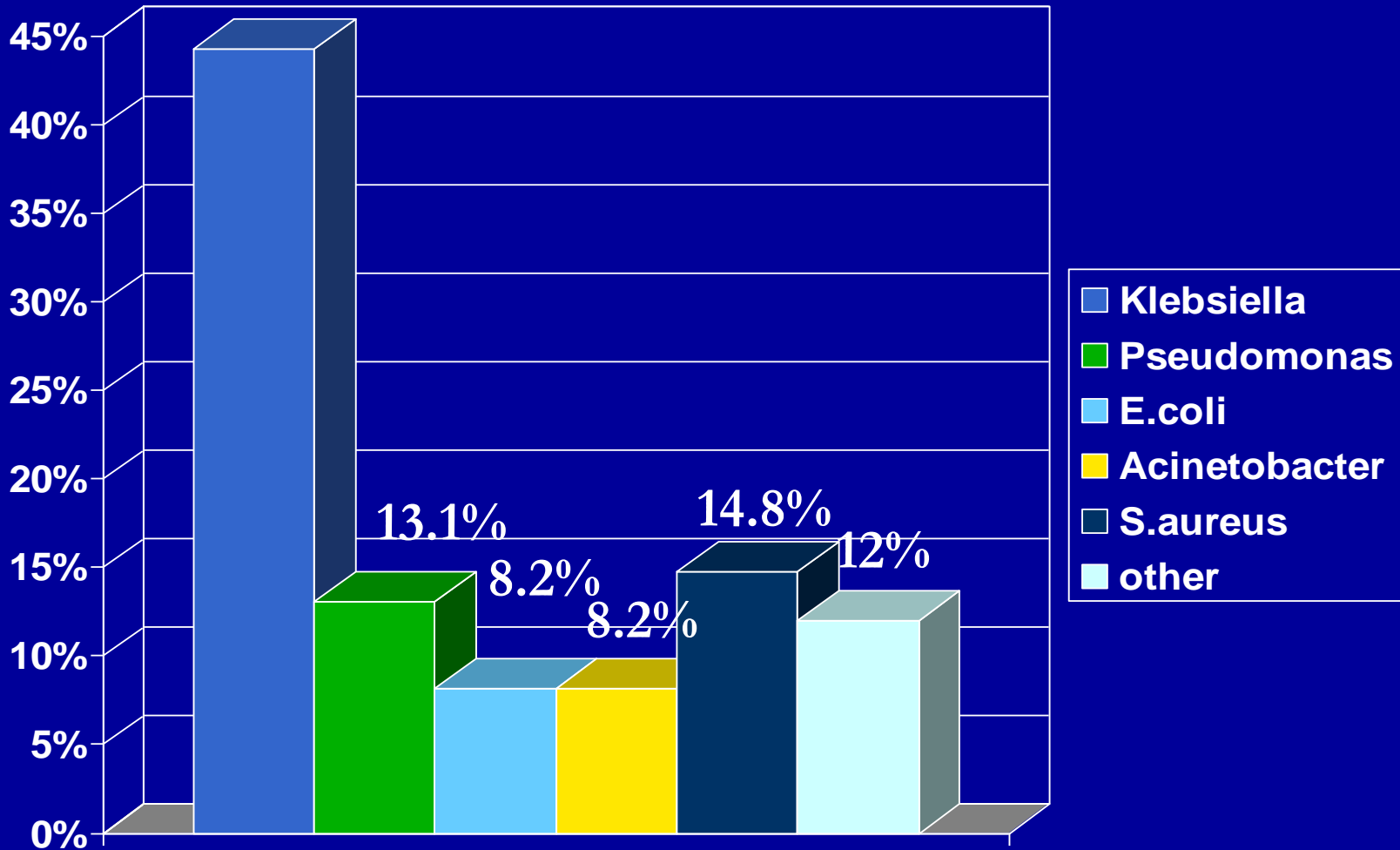


Sputum culture

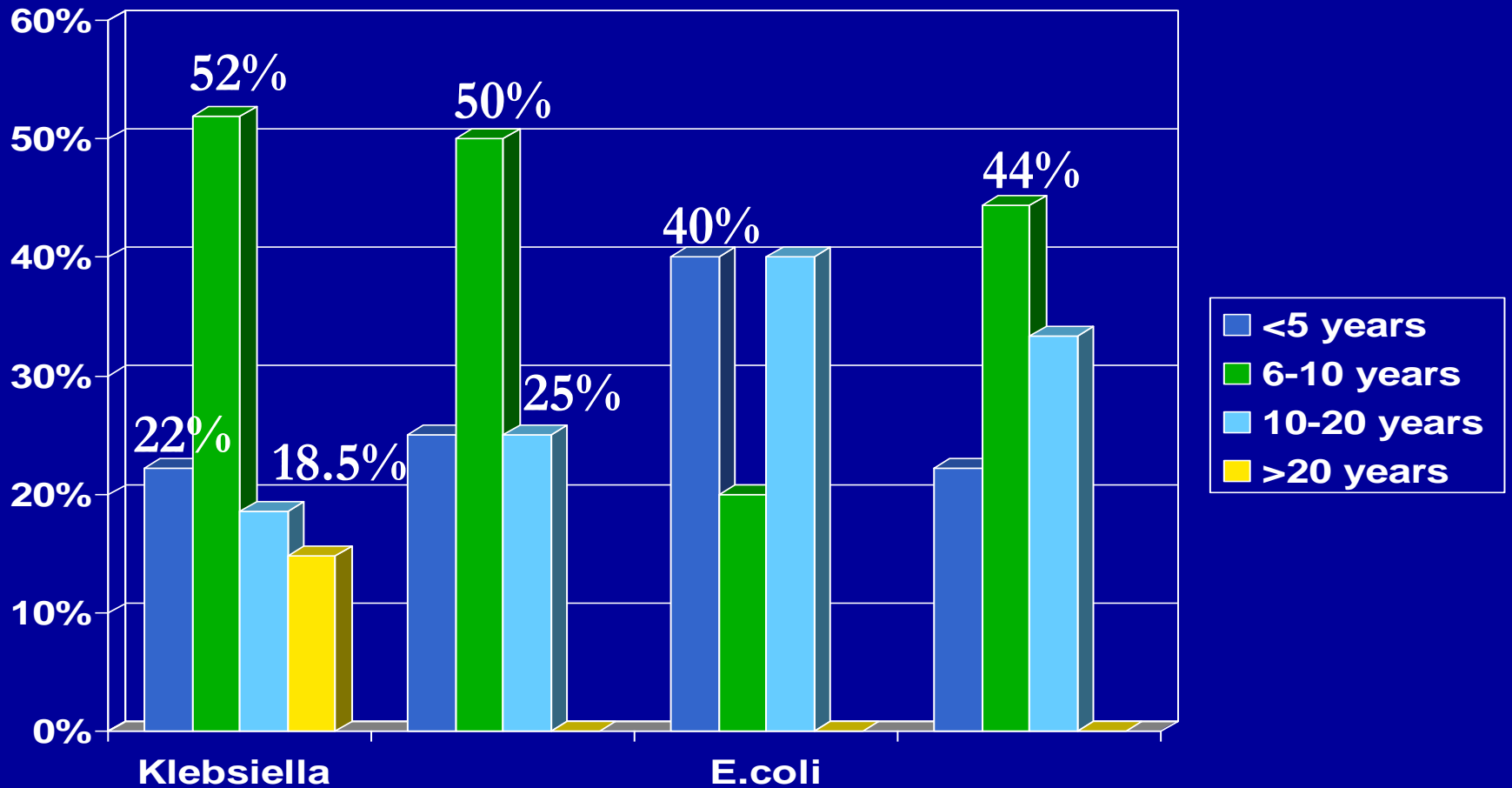
- Sputum for culture shows that out of 112 (100%) patients, *Klebsiella pneumonia* was detected in 54 (44.3%) patients, *Pseudomonas* in 16 (13.1%) patients, *E. coli* in 10 (8.2%) patients, *Staphylococcus aureus* in 18 (14.8%), *Acinetobacter* in 10 (8.2) and 14 (12%) patients had growth of other organisms.

Sputum culture growth

44.3%



Correlation of growth of organism with duration of diabetes

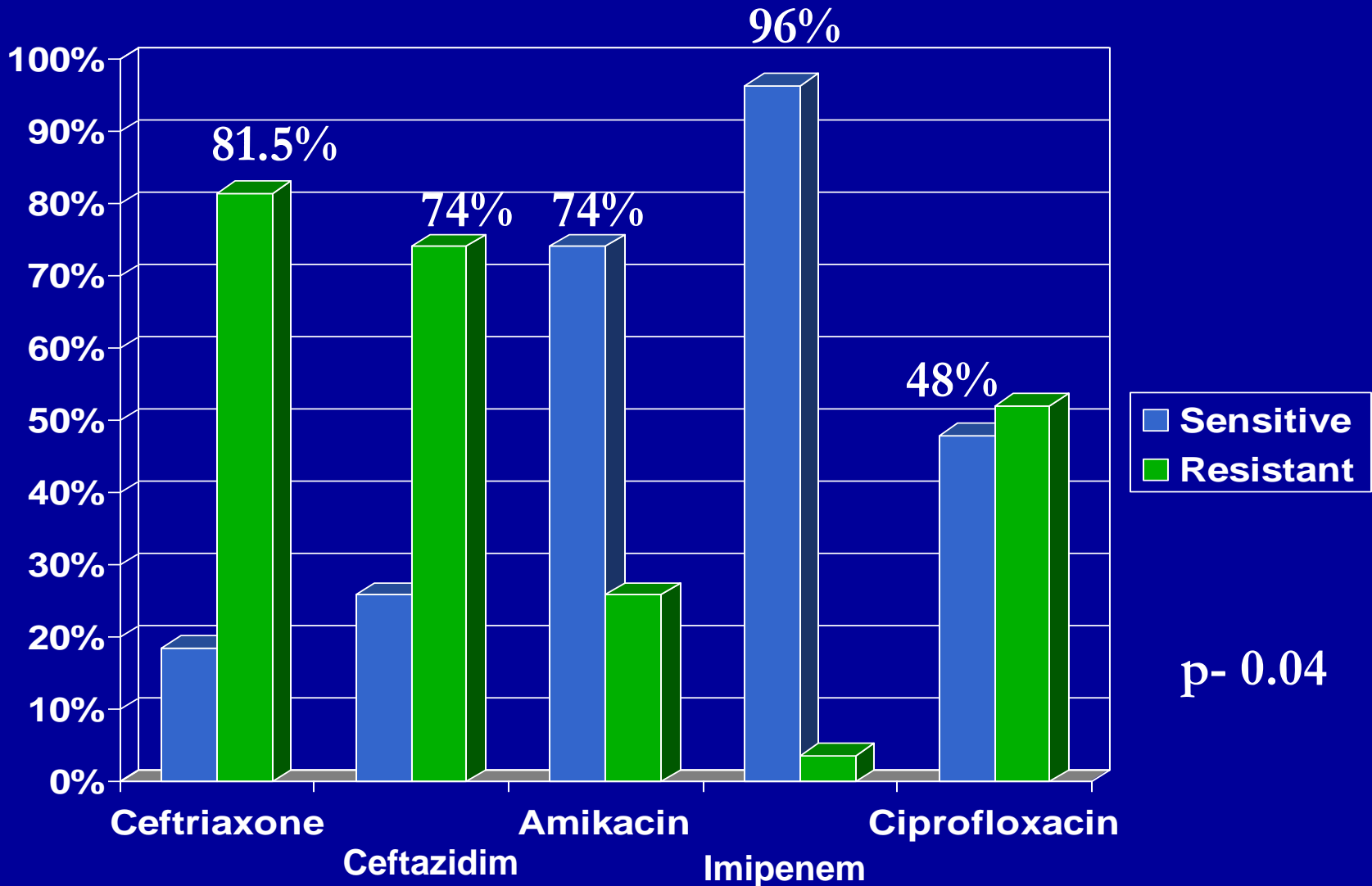


p - 0.88

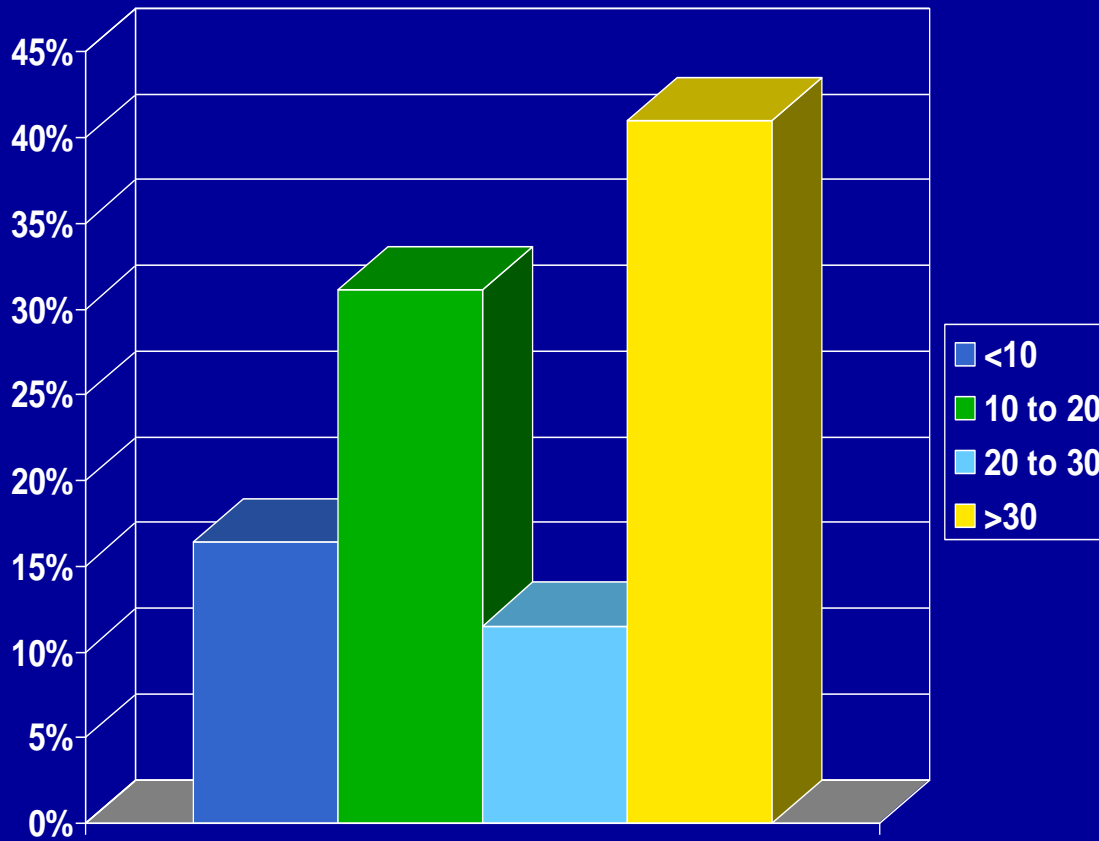
Antibiotic sensitivity

- Antibiotic sensitivity pattern shows that among 54 (100%) growth of Klebsiella, Ceftriaxone was 10 (18.5%) sensitive vs 44 (81.5%) resistant, Ceftazidime was 14 (25.9%) sensitive vs 40 (74.1%) resistant, Amikacin was 40 (74.1%) sensitive vs 14 (25.9%) resistant, Imipenem was 52 (96.3%) sensitive vs 2 (3.7%) resistant, Ciprofloxacin was 26 (48.1%) sensitive vs 28 (51.9%) resistant

Klebsiella Sensitivity

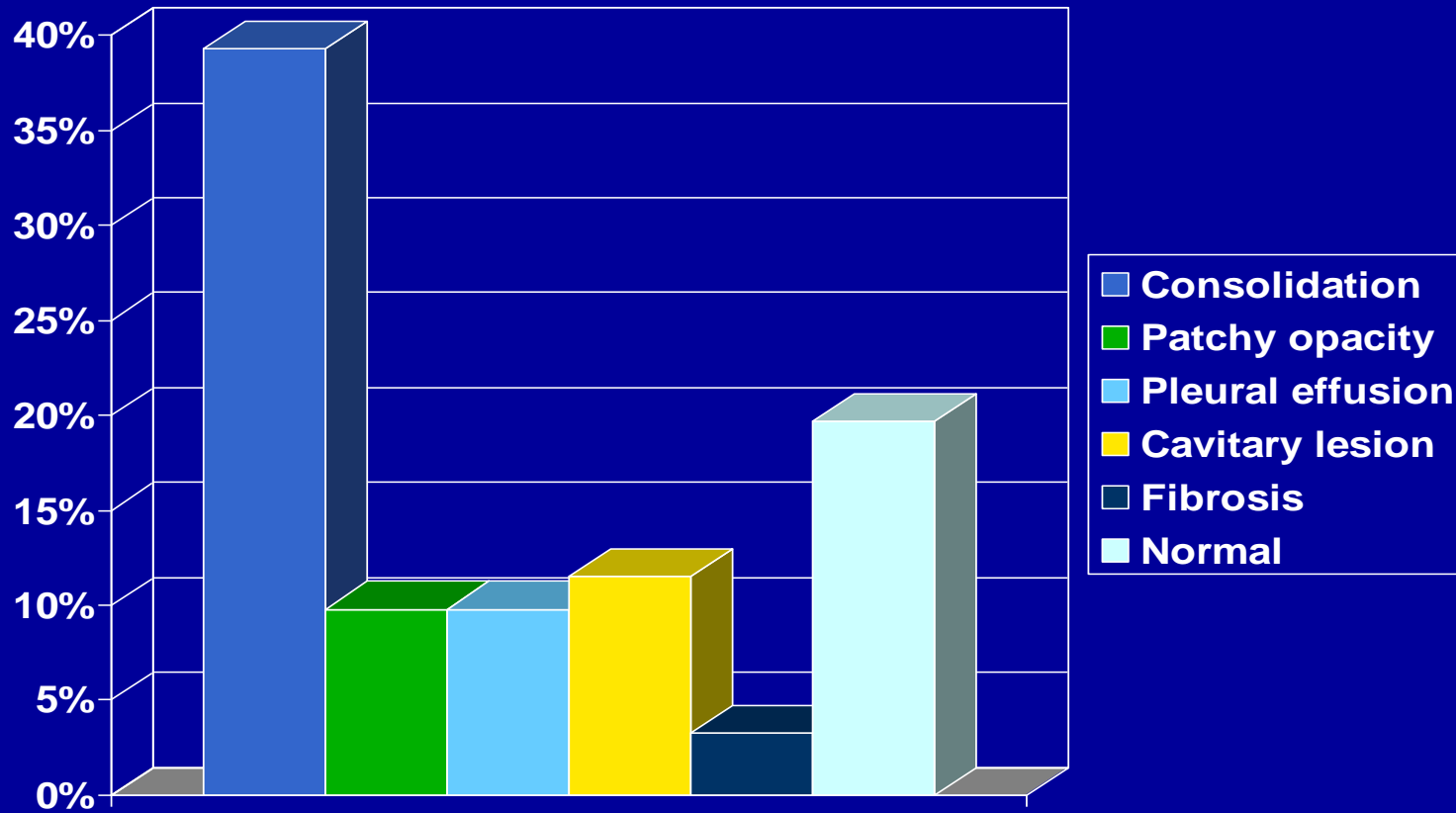


Pus Cell

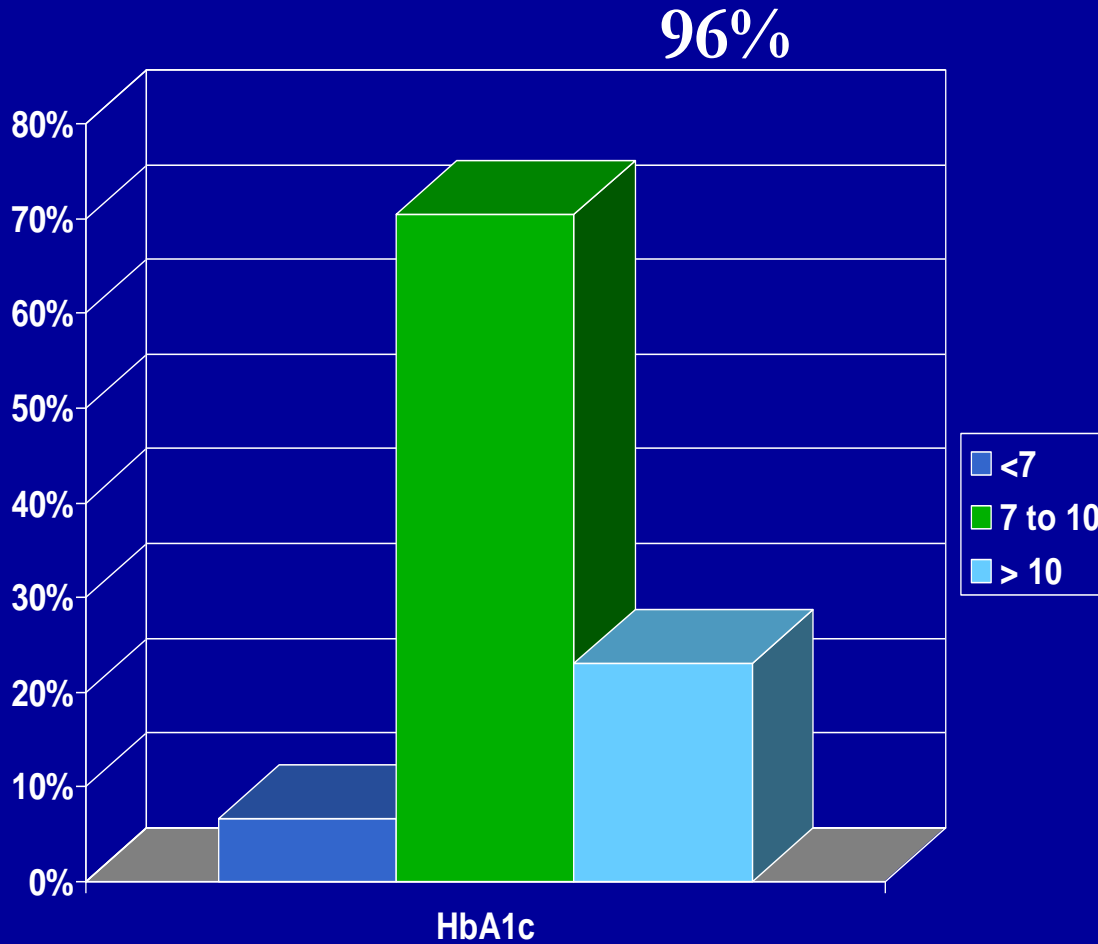


Chest x-ray

96%

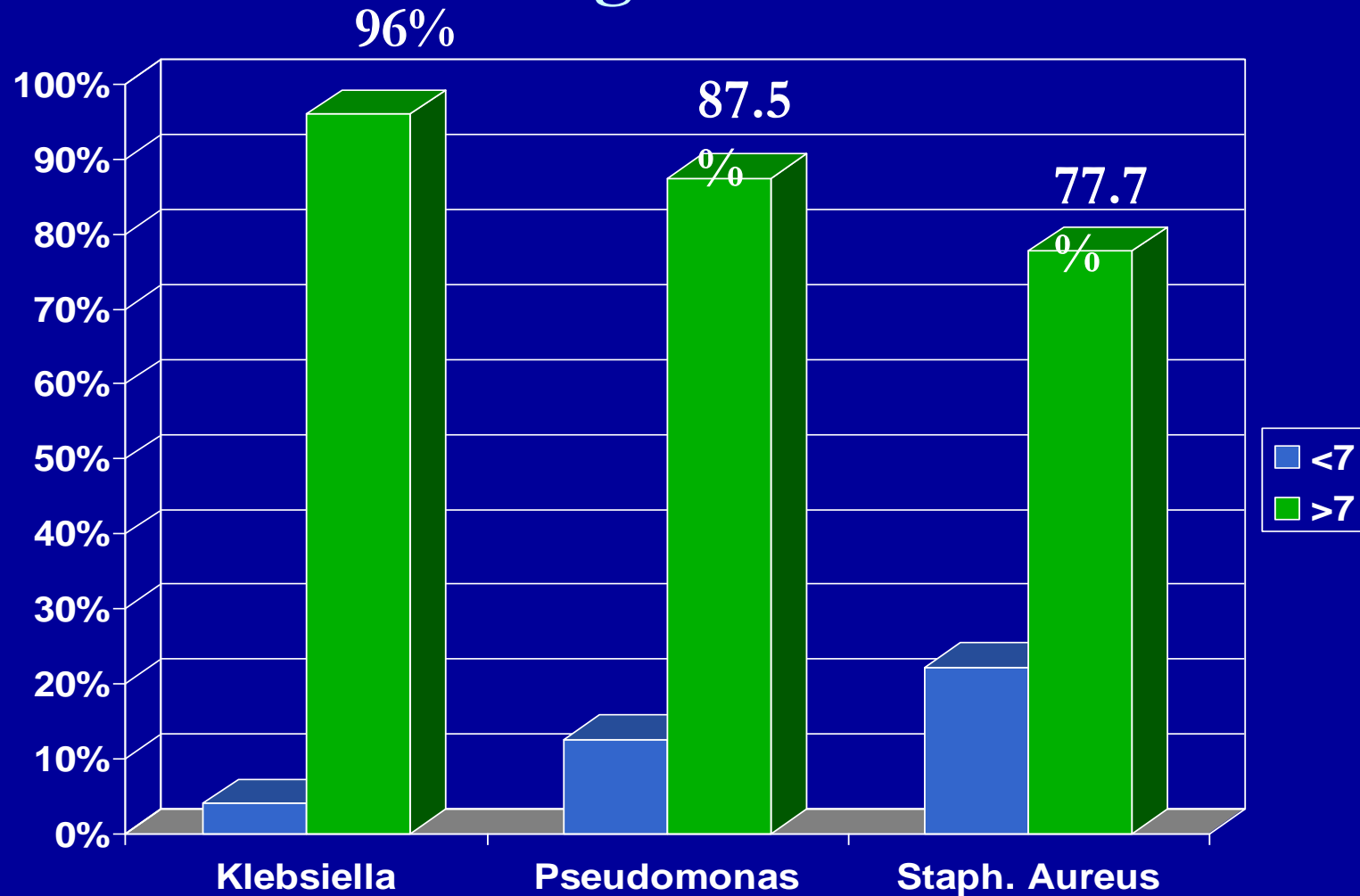


HbA1c level



- Mean HbA1c - 8.6 ± 1.89

Correlation of HbA1c level & growth of organism



p - 0.69

Conclusion

- The above results suggest that community acquired pneumonia in uncontrolled diabetic patients are more frequently due to *Klebsiella* and *Pseudomonas* and frequently they are resistant to Ceftriaxone.
- So, empirical treatment of diabetic pneumonia with Ceftriaxone is not a good option and alternatively other antibiotics like Amikacin or Imipenem may be used.

Thank You All

