



**UNIVERISTY OF HEALTH SCIENCES, LAHORE**



# **FREQUENCY OF ANTI-NEUTROPHIL CYTOPLASMIC ANTIBODIES IN GLOMERULONEPHRITIS**

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# Introduction

- Glomerulonephritis is an inflammatory condition of renal glomeruli <sup>1</sup>
- At risk for loss of kidney functions and cardiovascular disease
- Early phases of kidney involvement in autoimmune patients are clinically silent
- Nephron damage: histopathological examination is gold standard
- Antineutrophil cytoplasmic antibodies (ANCA) may be used to find out early nephrons damage



# Introduction

- ANCA: useful tool for patients with systemic vasculitis especially glomerulonephritis <sup>2</sup>
- Autoantibodies are hallmark of autoimmune diseases <sup>3</sup>
- In autoimmune diseases, renal involvement is about 75%–90% <sup>4</sup>
- ANCA shows two patterns, cytoplasmic pattern (c-ANCA) and perinuclear pattern (p-ANCA)
- c-ANCA corresponds mostly with proteinase-3 antigen whereas p-ANCA with myeloperoxidase antigen <sup>5</sup>



# Objective

- Frequency of p-ANCA and c-ANCA in the patients of glomerulonephritis



## **Material and Method**

- Department of Immunology UHS Lahore
- Department of Nephrology, Sheikh Zayad Medical Complex, Lahore
- Sixty four patients included in the study
- Analytical cross sectional study
- October 2008 - September 2009



# Patients Criteria

## Inclusion Criteria

- Age: 11-60 years
- Gender: Both male and female
- Individuals willing to participate in this study

## Exclusion Criteria

- Rheumatoid arthritis (RA)
- Pregnancy



ANCA ELISA



***Micro plate  
Reader-680  
BIORAD***



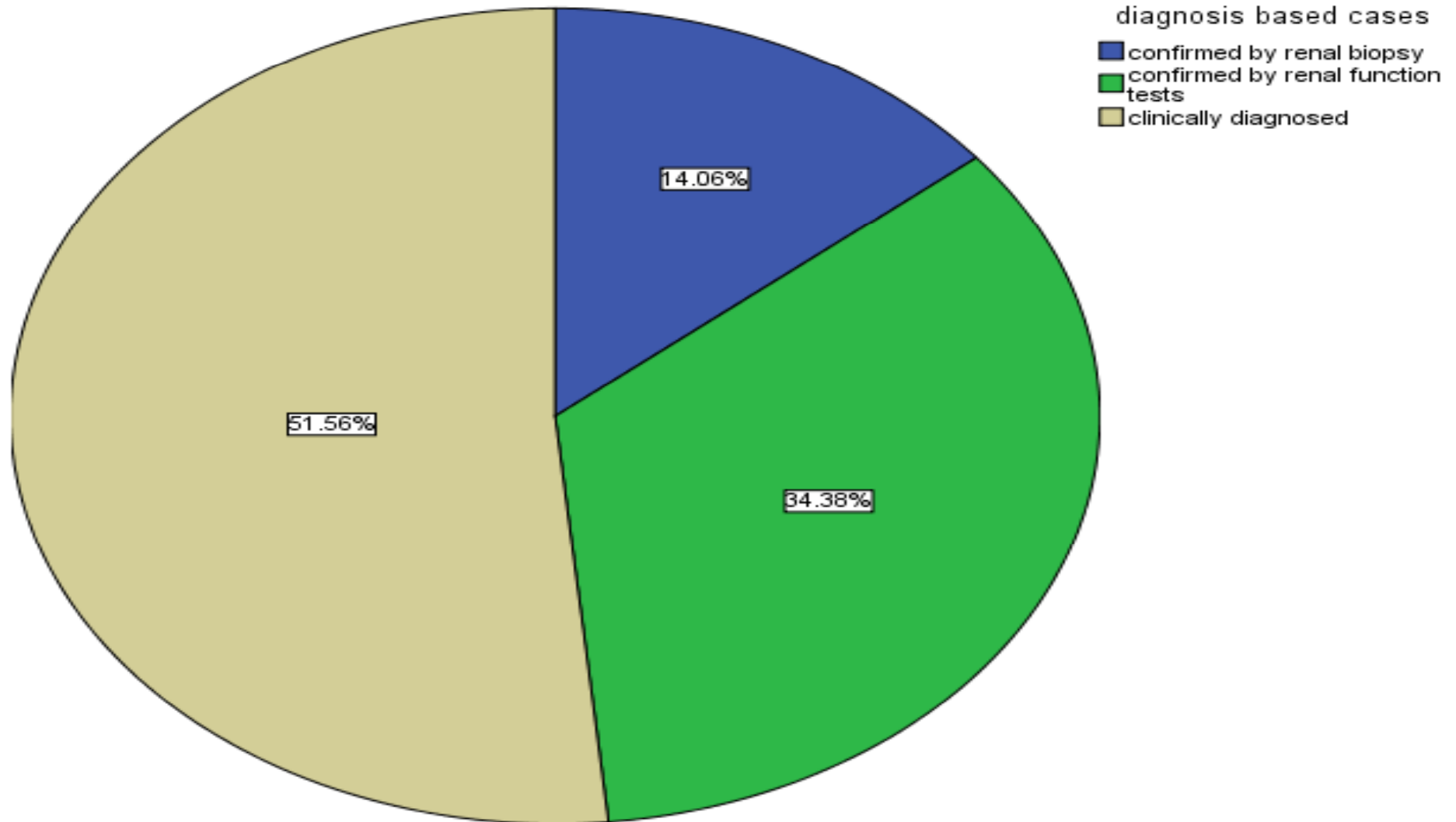
# DATA ANALYSIS

- SPSS version 16.0
- Mean  $\pm$  SD: quantitative variables
- Frequency and percentage: qualitative variables
- Comparison between two groups: Independent *t*-test
- *p* value  $< 0.05$  is statistically significant



# RESULTS

# Spectrum of Diagnosis



# Results...

## p-ANCA and c-ANCA between two age groups

	Mean $\pm$ SD		<i>p</i> -value*
	Group A (11 – 39 years) (n=35)	Group B (40 – 60 years) (n=29)	
<b>p-ANCA</b>	0.50 $\pm$ 0.34	3.8 $\pm$ 9.37	0.03
<b>c-ANCA</b>	0.94 $\pm$ 0.62	1.31 $\pm$ 2.15	0.33

n= Number of patient

\* Significant at 5% level of significance

# Results

## c-ANCA and p-ANCA: duration of disease

	Mean $\pm$ SD		<i>p</i> -value*
	p-ANCA	c-ANCA	
<b>&lt;12 months (n=55)</b>	2.14 $\pm$ 6.71	1.08 $\pm$ 1.57	0.25
<b>12 – 60 months (n=5)</b>	0.31 $\pm$ 0.09	0.99 $\pm$ 0.42	0.01
<b>&gt;60 months (n=4)</b>	0.45 $\pm$ 0.19	1.44 $\pm$ 0.53	0.01

n= Number of patient

\* Significant at 5% level of significance

# Results

## p-ANCA and c-ANCA on the basis of diagnosis

	Mean $\pm$ SD		<i>p</i> -value*
	Confirmed cases (n=31)	Clinically diagnosed cases (n=33)	
<b>p-ANCA</b>	3.07 $\pm$ 8.78	0.78 $\pm$ 1.36	0.14
<b>c-ANCA</b>	1.17 $\pm$ 1.99	1.10 $\pm$ 0.687	0.65

n= Number of patient

\* Significant at 5% level of significance



## Discussion

- p-ANCA is more common than c-ANCA in glomerulonephritis but it was not statistically significant
- A significant comparison can be seen between the age groups only in p-ANCA ( $p < 0.05$ )
- No statically significant difference in the levels of p-ANCA and c-ANCA between clinical diagnosed and confirmed cases of glomerulonephritis – may be correct clinical diagnosis



# Discussion

- Duration of disease was divided into three groups 1<sup>st</sup> group showed non significant comparison between p-ANCA and c-ANCA
- 2<sup>nd</sup> and 3<sup>rd</sup> group showed significant comparison between p-ANCA and c-ANCA ( $p < 0.05$ )
- Our study favors the study of Aslam *et al* <sup>6</sup>: although ELISA is a specific method yet less sensitive
- Another study included two glomerulonephritis patients and used ELISA technique but no one was positive for p-ANCA or c-ANCA <sup>7</sup>



# Conclusion

- Glomerulonephritis disease seems to be better associated with p-ANCA than c-ANCA
- Age difference was significant only with p-ANCA in patients
- 1<sup>st</sup> group of duration of disease was non significant between p-ANCA and c-ANCA
- But 2<sup>nd</sup> and 3<sup>rd</sup> group showed significant comparison between p-ANCA and c-ANCA ( $p < 0.05$ )
- Level of p-ANCA and c-ANCA was found to be high in both clinically diagnosed and laboratory confirmed patients



## Future Recommendations

- Sensitivity and specificity of ANCA (p-ANCA and c-ANCA) should be performed in local population on a larger scale



## **I would like to thank.....**

- Dr Nadeem Afzal: my supervisor
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# Referance

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**Thank you**