State Of The System In Patients With Hospital Respiratory Disorder Within The Background Of Chronic Nephrosis

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ABSTRACT
Purpose of the study: to check some indicators of the immunohemogram in patients with community acquired respiratory disorder on the background of CKD.
Materials and methods. one hundred twenty patients with community-acquired respiratory disorder were examined: forty patients with respiratory disorder (group Pn) and eighty respiratory disorder, that developed against the background of chronic nephrosis (group Pn+ CKD). The management cluster (CG) consisted of twenty healthy individuals. The study found that the amount of leukocytes was exaggerated within the Mon + CKD cluster by 162.24% than in the CG (p <0.001), within the Mon cluster 263.14% on top of within the CG and twenty seven.79% than within the cluster Mon + CKD (p <0.001). In patients with Mon, the quantitative relation of the amount of neutrophils to lymphocytes significantly exaggerated (p <0.001 compared with the CG and also the Mon + CKD group), reflective the shift of the formula to the left, and within the Mon + CKD cluster this quantitative relation remained unchanged, despite the increase within the absolute variety of leukocytes. In patients with respiratory disorder with background CKD, a marked increase in T-lymphocytes was determined because of a population of CD8 and CD95 cells (p <0.001 compared with CG and also the Mon group). a rise in IgM concentration prevailed within the pneumonia cluster, and a rise in immune serum globulin prevailed within the PN + CKD cluster (p <0.001).
Conclusion. Respiratory disorder related to CKD is related to associate active general inflammatory response involving non-specific immunity and also the depletion of its cellular part, as well as activation of immunity because of chronic inflammation and chronic matter stimulation.

KEY WORDS: pneumonia, chronic kidney disease, cellular and humoral immunity.

1. INTRODUCTION

Community-acquired respiratory disorder is one among the foremost common causes of hospitalization. Renal lesions in illness|respiratory illness|respiratory disorder} verify the course and prognosis of the underlying disease. The severity of pneumonia is decided by 2 processes: the immune reaction and native tissue resistance [1,2]. Kidney illness, as a
pathology concomitant with respiratory disorder, is an unfavorable issue that aggravates the prognosis of the illness, likewise because the development of complications, a lengthy and severe course, and an magnified risk of antibiotic resistance. Chronic uropathy (CKD) is related to impaired system. These changes will contribute to violations of the mechanics barrier, cause a decrease within the diffusion capability of the lungs, and exacerbation of the hypoxic state related to emerging nephritic anemia [3]. The purpose of the study was to review some indicators of the immunohemogram in patients with community-acquired respiratory disorder on the background of CKD.

2. MATERIALS AND METHODS

The study enclosed one hundred twenty patients with acute respiratory disorder. the typical age of patients was forty eight.46 ± 3.78 years. forty patients failed to have a history of nephritic pathology (Mon group), eighty patients suffered from chronic uropathy (GFR for three months before respiratory disorder developed 30-60ml / min / one.7m2, Mon cluster + CKD). As a sway cluster (CG), twenty healthy people were examined. The immunohemogram includes the count of the cellular parts of the blood with the determination of the purposeful affiliation of the cells of the white corpuscle series by receptors on their surface and therefore the morphological and purposeful options of neutrophils, corpuscle counts were performed by flow cytometry employing a SYSMEX analyser, leucocyte reactivity and roughness and therefore the concentration of CIC binding IgG and immunoglobulin were conjointly evaluated. To identify intergroup variations, we have a tendency to used Student's confidence criterion with Bonferoni correction for multiple comparisons.

3. RESULTS AND DISCUSSION

The study discovered that the quantity of leukocytes was considerably multiplied altogether patients included within the study (Table 1), however this increase in patients of the Mon + CKD cluster was less pronounced compared with patients while not excretory organ pathology (in the Mon + CKD cluster, 162.24% higher than within the CG, p <0.001; within the Mon cluster, 263.14% more than within the CG and twenty seven.79% than within the Mon + CKD cluster, p <0.001 for each comparisons). Isolation of sure kinds of leukocytes discovered the following: generally, altogether patients included within the study, the quantity of all sorts of leukocytes was considerably bigger than within the CG (p <0.001). the quantity of neutrophils in patients within the Mon cluster was considerably more than not solely the CG, however conjointly the Mon + CKD cluster (p <0.001), the quantity of basophilis was comparable in each groups of patients, whereas lymphocytes, monocytes and eosinophils were additional multiplied in patients Mon + CKD compared with the Mon cluster. once analyzing the standard composition of the WBC series in teams of patients, shifts within the WBC formula were noted. Thus, in patients with Mon, the ratio of the quantity of neutrophils to lymphocytes considerably multiplied (p <0.001 compared with CG and the Mon + CKD group), reflective a shift to the left, and within the Mon + CKD cluster remained unchanged, despite the rise within the absolute variety of leukocytes (Table. 1). a big increase within the number of neutrophils and their roughness in acute respiratory disorder may be a reflection of the activation of the innate immunity in response to lipopolysaccharide-induced stimulation of alveolar macrophages and epithelial cells [4,5]. Changes within the WBC formula in patients with Pn + CKD square measure related to impaired functioning of the innate immunologic response, that is, a universal fast response mediate by polymorphonuclear cells [6,7].
In the white corpuscle population, the quantity of reactive lymphocytes conjointly considerably multiplied, which was additional important within the Mon + CKD cluster (p <0.001 compared with the CG and also the Mon group). A bigger increase within the variety and proportion of antigen-producing lymphocytes within the Mon + CKD cluster (p <0.001 for each indicators compared with the CG and also the Mon group) indicates a pronounced matter stimulation of the system [7].

An assessment of the cellular immunity options discovered that the proportion of cells bearing CD3 receptors (T-lymphocytes), CD4 (T-helpers) and CD8 (T-cytotoxic and T-suppressors) was significantly multiplied in patients with Mon (p <0.001 for all 3 indicators compared with CG), however, the immuno-regulation index (ratio CD4 / CD8) remained at the extent of CG. the quantity of cells bearing necrobiosis markers CD95 was conjointly considerably multiplied in patients with Mon (p <0.001). Background CKD was related to a fair additional pronounced increase within the proportion of Tlymphocytes thanks to a population of CD8 and CD95 cells (p <0.001 compared with CG and also the Mon group) (Table 1). This reality indicates a rise within the cytotoxic activity of the severity of necrobiosis [7,8].

The concentration of current immune complexes of immunoglobulin and IgM, as indicators of body substance immunity, was considerably multiplied altogether patients with respiratory disorder (p <0.001) (Table 1). In the Mon group, a rise within the concentration of ClIgM prevailed, that indicates activation of the first immune. within the Mon + CKD cluster, a rise in ClIgG prevailed. (p <0.001), a marker of the chronic immune response that's related to activation of the immunity [8,9].

Table 1. Immuno-gemogram indices in patients with acute pneumonia depending on the presence of background CKD

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Acute pyelonephritis (n=120)</th>
<th>Acute pyelonephritis + CKD (n=80)</th>
<th>Acute pyelonephritis (n=40)</th>
<th>KG (n=40)</th>
</tr>
</thead>
<tbody>
<tr>
<td>White blood cells, *10^9/L</td>
<td>14,90±5,24***</td>
<td>13,20±5,08***</td>
<td>18,28±3,70 ***</td>
<td>5,04±0,85</td>
</tr>
<tr>
<td>Lymphocytes, *10^9/L</td>
<td>4,56±2,75***</td>
<td>5,54±2,88***</td>
<td>2,59±0,58 ***</td>
<td>1,72±0,40</td>
</tr>
<tr>
<td>Lymphocytes, %</td>
<td>32,17±16,13</td>
<td>41,06±12,1***</td>
<td>14,40±3,28 ***</td>
<td>34,13±4,73</td>
</tr>
<tr>
<td>Reactive Lymphocytes, *10^9/L</td>
<td>0,26±0,29***</td>
<td>0,39±0,27***</td>
<td>0,01±0,00 ***</td>
<td>0,00±0,00</td>
</tr>
<tr>
<td>Reactive Lymphocytes, %</td>
<td>4,65±3,63***</td>
<td>6,88±2,18***</td>
<td>0,19±0,06 ***</td>
<td>0,14±0,23</td>
</tr>
<tr>
<td>Lyphocyte-producing antibodies, *10^9/L</td>
<td>0,10±0,12***</td>
<td>0,14±0,12***</td>
<td>0,01±0,02 ***</td>
<td>0,00±0,00</td>
</tr>
<tr>
<td>Lyphocyte-producing antibodies, %</td>
<td>1,79±1,53***</td>
<td>2,44±1,42***</td>
<td>0,50±0,68 ***</td>
<td>0,08±0,13</td>
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<td>CD3+, %</td>
<td>63,38±10,25***</td>
<td>66,75±8,62***</td>
<td>56,63±10,00 ***</td>
<td>35,50±4,55</td>
</tr>
<tr>
<td>CD4+, %</td>
<td>27,38±7,78***</td>
<td>27,56±8,85***</td>
<td>27,03±5,06 ***</td>
<td>20,25±2,73</td>
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<tr>
<td></td>
<td>CD8+, %</td>
<td>CD95+, %</td>
<td>Neutrophils, *10^9/L</td>
<td>Neutrophils, %</td>
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<tr>
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<td>35,99±12.57***</td>
<td>39,19±12.27***</td>
<td>9,14±4,98***</td>
<td>59,12±18,02</td>
</tr>
<tr>
<td></td>
<td>1,14±1,99</td>
<td>31,50±7,18***</td>
<td>6,29±2,69***</td>
<td>48,24±10,87***</td>
</tr>
<tr>
<td></td>
<td>1,11±0,62</td>
<td>29,58±4,45</td>
<td>14,85±3,32</td>
<td>80,87±4,79</td>
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<tr>
<td></td>
<td>1,33±0,12</td>
<td>21,10±3,63</td>
<td>2,99±0,55</td>
<td>59,47±4,94</td>
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Note: * - significance of differences with CG, ^ - significance of differences with the group of OP + CKD. One character - p <0.05, two characters - p <0.01, three characters - p <0.001.

4. CONCLUSION

Thus, the current study showed that acute respiratory disorder related to CKD was related to a lot of important response of such subpopulations of leukocytes as lymphocytes, monocytes, and eosinophils. In patients with Pn + CKD, as compared with patients while not background pathology, a hyperactive general inflammatory reaction was ascertained involving non-specific (innate) immunity and depletion of its cellular element, likewise as activation of resistance because of chronic inflammation and chronic substance stimulation.

REFERENCES


