The importance of postoperatore delirium (POD) on elderly patients in urology in increasing the day stay in hospital.

Abstract:-

Introduction & objectives: Delirium is a frequent post operative disorder to the sick and elderly, and always has been associated with extent of day stay in hospital, and certainly more cost for the hospital as well. The delirium causes an increased mortality and an increasing of mental status deterioration characterized by reduction of environmental recognition as well as the disorder of alertness.

The purposes of this study is to reveal the importance of postoperatore Delirium (POD) in the day stay in hospital. Materials & methods: In this study are included 1496 patients aged over 65 years who underwent an operation at the urologic clinic. Period of study: from January 2010 to December 2012. This study is prospective and random. All patients with psychological problems in admission and that were treated for these pathologies before admission in Urology Clinic are excluded from the study. The effectiveness of routine screening of postoperative Delirium (POD) in the elderly using Confusion Assessment Method (CAM). Psychiatrists are not necessary in this case.

Results: Are evaluated all the data taken from patients and from their examinations as: age, usage of medications, symptoms and problems, biochemical and clinical balance, hemodynamic examination, and preoperative, intra operative and postoperative evaluations. In 1496 patients, 270 of them (18%) had delirium postoperatore. On the average the patients with delirium stayed in the hospital more than the patients without delirium with a significant statistical difference between them t=5.12 p<0.01. On the average, the patients with delirium stayed in the hospital more than the patients without delirium with a significant statistical difference between them ANOVA F=26.2 P<0.01.

Conclusion: From this study even though small in number and short in time it is evidently noticed that postoperatore delirium in elderly in urology has an important influence in the increasing of the day stay in hospital. (ANOVA F=26.2 P<0.01.)

Key word: POD, CAM

Introduction: Increase in magnitude with advancing age, represent aging. Effects of aging on the nervous system include: selective attrition of cerebral and cerebellar cortical neurons neuron loss within certain areas of the thalamus, locus ceruleus, and basal ganglia, general reduction in neuron density, with loss of 30 percent of brain mass by age 80 decreased numbers of serotonin receptors in the cortex, reduced levels of acetylcholine and acetylcholine receptors in several regions of the brain decreased levels of dopamine in the neostriatum and substantia nigra and
reduced numbers of dopamine receptors in the neostriatum. The association of serotonergic, cholinergic and dopaminergic systems, respectively with mood, memory, and motor function, may partially account for depression, loss of memory and motor dysfunction in the elderly. With the increase of the average age the surgeries in elderly are also increased. The surgery plays an important role on emotional and spiritual deterioration on elderly. According to the American Psychiatric Association, Delirium is defined as "a disturbance of consciousness with the reduction of the ability to focus, sustain, or change in focus, a change in the recognition (memory deficit, disorientation, spoken of untidiness) or the development of perception mess.

Postoperative complications specific to elderly surgical patients such as delirium will be increasingly relevant in the coming decades. The prevalence of post-operative delirium in elderly patients ranges from 0% to 73%, depending on the study and type of surgery. Post-operative delirium is a medical emergency, which can occur within hours of surgery and has the potential to last up to 7 days. At least a quarter of elderly patients who develop delirium post-operatively may continue to have symptoms for up to 6 months after hospital discharge. Delirium postoperative has been associated with increased morbidity and mortality and long hospital stay. With increase of the average age the elderly surgery has increases as well.

The reason of Delirium postoperatively to elderly patients is multifactorial. Pathogenesis: Many theories emphasize aberrant neurotransmission. Other hypotheses invoke abnormalities in melatonin and serotonin, with abnormal tryptophan metabolism unifying these ideas because tryptophan is Neuronal damage is an alternative explanation, secondary either to oxidative stress, or inflammation. Proinflammatory cytokines increase in postoperative delirium, especially interleukin-6 and interleukin-8. In addition, elevations in C-reactive protein occur in delirious patients. A link between inflammation and neurotransmission has been proposed, with inflammation-induced perivascular edema leading to hypoxia and subsequent reduced synthesis of acetylcholine. It is generally thought that delirium represents global brain dysfunction. Electroencephalographic findings reveal a decrease in the fast alpha frequencies and an increase in the slower theta rhythm. In hypoactive delirium, hypoperfusion occurs globally in the frontal, temporal, and occipital lobes, and focally in the caudate head, thalamus, and lenticular nuclei. Delirium improves once blood flow returns to normal, suggesting that cerebral hypoperfusion may play a role. One of the most widely accepted mechanisms is cholinergic deficiency; increased serum anticholinergic activity is associated with delirium. The purposes of this study are to reveal the importance of postoperative Delirium (POD) in the day stay in hospital. Materials & methods: In this study are included 1496 patients aged over 65 years who underwent an operation at the urologic clinic. Period of study: from January 2010 to December 2012. This study is prospective and random. Pt with cardiac problems, Insult cerebral, Alzhemiers, phsicosa, parkinson are excluded from the study. The effectiveness of routine screening of postoperative Delirium (POD) in the elderly using Confusion Assessment Method (CAM). Psychiatrists are not necessary in this case. The patients’ days stay in hospital is analyzed, taking in consideration whether they have had postoperative delirium or not. Patients have had no difference between them concerning the type of surgery, pre-existing diseases, hemodynamic intraoperatore changes, or the biochemical balance and the blood framework, as well as the pre and postoperatore electrolytic balance.
### Table 1. General Data.

<table>
<thead>
<tr>
<th>year</th>
<th>age</th>
<th>65-70 years</th>
<th>71-75 years</th>
<th>76-80 years</th>
<th>&gt;80 years</th>
<th>Total number of patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>Females</td>
<td>36</td>
<td>22</td>
<td>19</td>
<td>6</td>
<td>83</td>
</tr>
<tr>
<td></td>
<td>Males</td>
<td>162</td>
<td>138</td>
<td>133</td>
<td>56</td>
<td>489</td>
</tr>
<tr>
<td>2011</td>
<td>Females</td>
<td>20</td>
<td>12</td>
<td>10</td>
<td>8</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>Males</td>
<td>148</td>
<td>149</td>
<td>147</td>
<td>50</td>
<td>494</td>
</tr>
<tr>
<td>2012</td>
<td>Females</td>
<td>15</td>
<td>10</td>
<td>8</td>
<td>6</td>
<td>39</td>
</tr>
<tr>
<td></td>
<td>Males</td>
<td>142</td>
<td>80</td>
<td>78</td>
<td>41</td>
<td>341</td>
</tr>
</tbody>
</table>

### Results:

### Table 2. Post-operatively Delirium Incidence.

<table>
<thead>
<tr>
<th>age</th>
<th>Female</th>
<th>Men</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>65-70 years</td>
<td>1</td>
<td>76</td>
<td>77</td>
</tr>
<tr>
<td>71-75 years</td>
<td>1</td>
<td>73</td>
<td>74</td>
</tr>
<tr>
<td>76-80 years</td>
<td>1</td>
<td>70</td>
<td>71</td>
</tr>
<tr>
<td>&gt;80 years</td>
<td>1</td>
<td>47</td>
<td>48</td>
</tr>
</tbody>
</table>

![Graph showing day stay comparison between Delirium and Non-Delirium patients.](image-url)
Fig 16. Average day stay in hospital for patients with and without delirium.

Patients with delirium have stayed in average longer in the hospital compared to patients with no delirium, with a significant statistical difference between them of $t=5.12 \ p<0.01$.

Fig. 17. Average day stay in hospital for patients with delirium and without delirium through the years.

In 2010 the average day stay of patients was 9.22 days, while patients with delirium stayed for about 10.1 days. In 2011 the average day stay was 9.2 days. Patients with delirium stayed for
about 10.0 days. In 2012 the average day stay was 8.25 days, and patients with delirium stayed for about 9.3 days.

In these three years, patients with postoperative delirium stayed in average longer in the hospital than patients without postoperative delirium, with a significant statistical difference between them ANOVA F=26.2 P<0.01.

Conclusion:

Patients with postoperative delirium had a longer day stay in hospital compared to patients without postoperative delirium, despite the same conditions such as morbidity and physical status, with a significant statistical difference between them ANOVA F=26.2 P<0.01.

Discussions:

Early postoperative delirium is a problem\cite{15}, not only to the well going of the surgery, for which the patient is staying in hospital, but is also a predisposing factor that these patients, have delirium even after being discharged from the hospital. Cognitive postoperative deterioration, is a general and important problem in old patients, after cardiac and non cardiac surgery.

In a systematic summery, the role of postoperative analgesia is seen on the first postoperative day. Authors also note that patients with postoperative delirium have a tendency to increase their day stay in hospital, compared to patients with no delirium, but with the same preoperative physical status, who undergo the same type of surgery and anaesthesia, and with no intraoperative differences. This, because a patient who is not fully responsible, can rip off his intravenous catheter, urinary catheter, sometimes the central one too; actions which have their own result in the performance of the disease.

Bibliography:


