B ased on data released by World Health Organization, approximately 70-90% of all population suffers from spinal pain and this remains one of the problematic issues of healthcare [7]. Vertebral column diseases, such as osteochondrosis, osteoporosis, intervertebral hernias, and scoliosis are common causes of discomfort in spine [6]. These conditions occur as a result of sedentary lifestyle, negligence towards exercising, smoking and alcohol abuse, unbalanced diet, and pervious traumas.

X-ray imaging in standard projections and with functional load on pathologic movement of vertebrae, and spondylolisthesis is routinely used for investigating vertebral column diseases [1]. In modern day, computer tomography (CT) and magnetic-resonance imaging (MRI) are preferred methods of medical imaging of intervertebral disks [8].

Despite successes in development of modern radiologic imaging techniques, there are still several unanswered questions regarding overdiagnosis of osteochondrosis, determination of the role of frequency of spinal pain syndrome controlled by age and sex, identification of causes of spinal pain, and appropriateness of diagnostic approach. Various other conditions such as straining, muscle "tiredness", myositis, and etc. are mimicked by overdiagnosis of osteochondrosis [2,4]. Usually referring to manual therapy practitioner or a vertebral disease specialist is sufficient for relieving pain. However, in osteochondrosis, pain becomes chronic and visits to doctor and physical therapy procedures only temporarily improve patient's condition.

Materials and Methods
All patients referring to Republican Clinical Hospital named after Mirgasmov (RCH) during 2013 with strong spinal pain syndrome were enrolled into the study. The study enrollees (n=606) were divided into two gender groups. First group had 210 male patients (35%) and second group consisted of 396 females (65%) at the ages between 16-65 and 16-70, respectively.

Our study has revealed, that in the age group below 40, adolescents and adults mainly suffer from pain in lumbar section of vertebral column, whereas in older ages cervical pain prevails, frequency of which increases by age and is seen in higher numbers in females.

Table 1. Prevalence of spinal pain syndrome in studied patients controlling for sex and age (before and after 40 years)

<table>
<thead>
<tr>
<th>Vertebral column segment</th>
<th>Up to 40 years</th>
<th>Above 40 years</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Males</td>
<td>Females</td>
</tr>
<tr>
<td>Cervical segment</td>
<td>18</td>
<td>54</td>
</tr>
<tr>
<td>Thoracic segment</td>
<td>13</td>
<td>30</td>
</tr>
<tr>
<td>Lumbar segment</td>
<td>86</td>
<td>114</td>
</tr>
</tbody>
</table>

Table 2. Age distribution of patients in study groups, %

<table>
<thead>
<tr>
<th>Sex/Age</th>
<th>16-19</th>
<th>20-29</th>
<th>30-39</th>
<th>40-49</th>
<th>50-59</th>
<th>60-69</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male 100%</td>
<td>15</td>
<td>14</td>
<td>25</td>
<td>18</td>
<td>20</td>
<td>6</td>
</tr>
<tr>
<td>Female 100%</td>
<td>7</td>
<td>10</td>
<td>33</td>
<td>27</td>
<td>16</td>
<td>7</td>
</tr>
</tbody>
</table>

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**Abstract.** Causes of spinal pain are extremely varying. Sex composition of patients referring with spinal pain at the age of 16 to 35 was 35% and 65% for males and females, respectively. Peak number of complaints was observed in 30-40 years age group of highest work ability. The followings should be considered as precautions in spinal pain: onset of pain at the age of 20 and after 30, family history of oncologic diseases, walking disorders or dysfunctions of sphincters, numbness in extremities, general malaise and rapid loss of weight, pain at rest and primarily at night, as these conditions may be a warning of underlying serious disease. Selection of algorithm for radiologic investigation is decided by the treating physician.

**Key words:** spinal pain, radiologic diagnostics.

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As seen from Table 2, peak number of patients with spinal pain is seen at the ages of 30 to 40, which is the best age for work ability. Surely, causes of pain vary here and separate etiologic factors are presented in Table 3.

Multiple causes of spinal pain exist as presented in the table. However, in about half of cases myofascial pain syndrome without bone involvement symptoms were identified. Pain at adolescent ages was primarily caused by inadequate physical development of children and incorrect posture; in addition, if a patient had platypodia of varying degree, this resulted in inclination of pelvis due to shortness of one leg and further development of scoliosis, a spinal curvature.

Table 3.

<table>
<thead>
<tr>
<th>Prevalence of Disorders Causing Spinal Pain, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Myofascial pain syndrome</td>
</tr>
<tr>
<td>Scoliosis</td>
</tr>
<tr>
<td>Intervertebral hernia, disc protrusion</td>
</tr>
<tr>
<td>Osteoporosis</td>
</tr>
<tr>
<td>Spondyloarthrosis, osteochondrosis</td>
</tr>
<tr>
<td>Other (injury, visceral disease, oncologic disease)</td>
</tr>
</tbody>
</table>

Identification of scoliosis and osteochondrosis was conducted using X-ray imaging in standard projections with the equipment produced by General Electric. Patients with suspected intervertebral disc protrusion or hernia were recommended additional radiologic evaluations, including CT and MRI, those with osteoporosis were recommended undergoing osteodensitometry, and relevant patients were referred to an oncologist and osteoscintigraphic evaluation for identification of bone metastases.

Results and Discussion

Regardless of age, female population more frequently refers to physician with spinal pain. It should be noted that, spinal pain in women above 40 were associated with menopausal osteoporosis. In these certain cases, improvement of condition was observed after consultation of gynecologist and administration of treatment course with calcium drugs.

It is worthwhile to emphasize that cancer may hide under symptomatology of radiculitis and osteochondrosis, which may only be identified by a professional. Patients should not be making self-diagnosis and self-treatment. An example from archive materials of RCH named after Mirgasimov: patient, 16 years; started complaining of lumbar pain irradiating to right leg. She did not receive a physician examination, started self-treatment and a temporary improvement occurred. Pain recurred after a month becoming more apparent during night. The patient referred to a neurologist with her parents, who recommended X-ray imaging of lower lumbar vertebrae and pelvic bones. X-ray imaging identified large-sized destruction of right iliac bone (Fig. 1). An MRI was recommended in order to assess bone defect and degree of distribution of the process beyond bone (Fig. 2). In MRI, a clear infiltrative process (malignancy) was observed.
and biopsy confirmed fear of the oncologist. The diagnosis was Ewing's Sarcoma of non-typical location. Chemotherapy was administered.

Main task of the physician is to differentiate oncologic (primary bone tumors if age is up to 20 and metastases above 50 years of age), traumatic, infectious (spondylitis), metabolic (osteoporosis), and degenerative-dystrophic (osteochondrosis, spondyloarthrosis) origin of spinal pain.

Spondyloarthrosis and osteochondrosis served as the cause of spinal pain in 27% cases. Intervertebral disc pathology was seen in 20% cases. Muscular apparatus should be strengthened via therapeutic gymnastics in order to prevent recurrence of pain and also swimming is a recommended type of sports.

However, majority of patients with spinal pain had the so-called age-related changes of intervertebral discs. Discs "dry out" by age, become thinner, and bone tissue undergoes degenerative-dystrophic changes. These changes are seen at the ages of 40-50, which is a normal process. However, a pathologic process is involved if these changes occur before 40.

Unfortunately, age-related disorders of spinal column are becoming "younger" today. In addition, intervertebral disc hernia is considered to be the most severe complication of osteochondrosis. Protrusion of pulpous nucleus is considered to be a predecessor for intervertebral disc hernia and disc fragment protruding into spinal canal through defected fibrous ring becomes sequestrated.

Vertebral column is more loaded on lumbar section and as a result of upright walking lower intervertebral discs L4-L5 and L5-S1 wear-out more easily than others [5, 9]. Persisting nature of pain, irradiation to leg, numbness, and deterioration of sensitivity or dysfunction of sphincters are the symptoms requiring general X-ray imaging. If a significant decrease in height of intervertebral space is evident in X-ray image and patient is below the age of 30-40, MRI will be recommended to rule in or out a disc protrusion in best case (which is a reversible process) or
a hernia in worst case.

Thus, retaining youth of spinal column is necessary from early childhood. Daily walks in fresh air, morning exercises, fighting bad habits (such as being overweight, smoking, sedentary lifestyle), and swimming increases blood circulation and metabolism, which helps in protecting and restoring flexibility of vertebral column.

Conclusions
1. Spinal pain is one of the main causes of visits to doctor regardless of age. Here, lumbar segment of spinal column suffers the most.
2. Intake of Vitamin D3 drugs is recommended in women with the purpose of preventing climacteric osteoporosis.
3. X-ray imaging of vertebral column to identify scoliosis is recommended in children with platypodia.
4. Self-diagnosis and self-treatment are strictly contraindicated in patients with spinal pain, especially those who suffer from night pain; they need to refer to a specialist.
5. Development of degenerative-dystrophic changes in vertebrae and intervertebral discs at the age before 30-40 requires precise diagnostic algorithm of evaluation.
6. Correct weight-lifting is recommended by equally distributing weight in hands without bending and in the case of trauma physician’s recommendations must be adhered to.

REFERENCES
5. Мангал Р. Магнитно-резонансная томография при дистрофических поражениях позвоночника. Автореф. дис. …канд.мед.наук. - М., 1999. - 16 с

XÜLASƏ
BEL AĞRILARININ ŞƏBƏBLƏRİNƏ DİAQNOSTİK YANAŞMA

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Onurğa sütununun ağrılı bil birlikdə sadalan şəmətələr (anamnezədə xərəqənən olması, ağrilar 20 yaşdan övvəl və ya 50 yaşдан sonra başlayır, ümumi halsızlıq və çəkinin vəşəfini və xüsusi Şəxən gecə zamanını baş verəsini, yerin pozulması və ya şərəflərin keyfiyyətini) altında ciddi xəstəlik gizlənə bilir. Həkimin diagnostik alqoritmini tayin etməsi vacibdir.

Açar sözü: onurğa sütununun ağrılı, şüa diagnostikası
РЕЗЮМЕ

ДИАГНОСТИЧЕСКИЙ ПОДХОД К ПРИЧИНАМ БОЛЕЙ В СПИНЕ

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Причины болей в спине крайне разнообразны. Среди обратившихся больных в возрасте от 16 и старше боль в спине отмечалась у 35% мужчин и у 65% женщин. Пик жалоб приходился на трудоспособный возраст от 30 до 40 лет. При болях в спине должно насторожить: начало болей в возрасте до 20 лет или после 50 лет, онкологическая наследственная отягощенность, нарушение походки или работы сфинктеров, онемение конечности, общее недомогание и быстрая потеря веса, боль в покое и преимущественно ночью. Так как под этим может скрываться причина серьезного заболевания. Выбор алгоритма лучевых методов визуализации определяет лечащий врач.

Ключевые слова: боль в спине, лучевая диагностика.

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