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A review of the current state of knowledge on Sciatica for family physicians. Diagnosis and potential treatments

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Abstract

Introduction and objective

Sciatica or lower back pain (LBP) with sciatic radiation is one of the most common problems in primary care. Patients with such ailment vary in age and general condition of health, with average age of patient reporting such symptoms successively lowering. The aim of this article is to broaden the knowledge of medical practitioners on diagnosis, management and potential treatments of lower back pain with sciatic radiation by reviewing available information on various aspects of diagnosing, managing and means of treatment od sciatica. Updated information on diagnosing and treating sciatica may prove crucial for family physicians or general practitioners (GP) due to ever increasing number of patients.

Review methods

To prepare this review the authors compiled, organized and arranged data available in PubMed and Google Scholar databases. The search for adequate data was performed by searching following keywords: “Sciatica”, “Lower Back Pain”, “treatment”, “diagnosing”, “Family physician”, “General practitioner”. The search results were then limited to studies no older than last 10 years (2014-2024), written primarily in English. Older studies determined as “key studies” were also included.

Brief description of current state of knowledge

Currently, with patients who report complaints indicating sciatica, symptomatic treatment using muscle relaxants (e.g. Thiocolchicoside) and anti-inflammatory drugs (e.g. Naproxen, Dexamethasone) is a primary course of action. Such treatment is effective, but usually the relief is of short duration and patients come back with identical symptoms. Further diagnosis includes X-ray imaging and MRI, but are usually not conducted, and even if conducted, without visible cause in imaging diagnostics, the treatment is symptomatic. Therefore, the search for optimal, long-lasting therapy continues.

Summary

The increasing number of patients experiencing sciatica and decreasing mean age of experiencing first symptoms, the importance of proper treatment is bigger than ever before. With adequate management, combining drug therapy with other means of treatment, we could be able to successfully mitigate symptoms, identify the source and adequately treat the cause of symptoms. With proper use of muscle relaxants, analgesics and anticonvulsants and addition of physical conditioning combined with detailed, focused diagnostics, including X-ray and MRI, we could be able to pin point the source of ailments and target them specifically. Gradual increase in intensity of treatment, beginning with physiotherapy, acupuncture, through drug therapy to epidural infiltrations and radiofrequency could prove beneficial for patients and medical practitioners.

Keywords: Sciatica; Lower back pain; treatment; diagnosing; family physician; general practitioner

I. Introduction and purpose

Back pain is a very common issue among patients, according to records, annual incidence of sciatica is 1-5% and lifetime incidence varies between 10% and 40% [1–3] and a point of

prevalence of 11.9% [4]. According to the Global Burden of Disease, the estimate of years lived with disability associated with LBP has increased by approximately 48% in the last 27 years [5]. The symptoms may include different part of spine, it usually refers to cervical (~15%), thoracic or lumbar (~80%) region [6]. The pain may radiate to different parts of the body, depending on affected areas. In around 90% of the cases the pain is non-specific, and it's cause cannot be determined by imaging test, thou they may reveal common age-related changes in spine [6]. Lower back pain (LBP) is the leading cause of disability worldwide and a common presentation to medical services, with an average prevalence of 9.4%. Typically LBP is benign and self-limiting, but can be an indicator of serious spinal pathology, such as malignancy, occurring in 1.4–5% of presentations [7,8]. The association between sciatica and lower back pain cannot be omitted. The aim of this study is to broaden the knowledge of medical practitioners on diagnosis, management and potential treatments of lower back pain with sciatic radiation by reviewing available information on various aspects of diagnosing, managing and means of treatment, including physiotherapy and invasive procedures, of sciatica. Updated information on diagnosing and treating sciatica may prove crucial for family physicians or general practitioners (GP) due to ever increasing number of patients, and allow them to better understand and cope with such ailments.

II. Review methods

Updated information on LBP with sciatic radiation is crucial for family physicians. In this study we review the available literature on sciatica and lower back pain. We included medical literature in newest issues available and relevant articles, which were identified via search on PubMed and Google Scholar databases with specific keywords. Further selection of articles was achieved by restricting the publication date to articles published in 2014 and after, with some exceptions for articles determined by authors as crucial. Additionally, the authors' clinical experience on sciatica has been utilised to propose a viable code of conduct for family physicians and general practitioners.

III. Description of the current state of knowledge

Sciatica or LBP with sciatic radiation is a condition described as unilateral pain and/or paraesthesia in the distribution of the sciatic nerve or an associated lumbosacral nerve root. Pain is the result of the irritation of the sciatic nerve, with or without motor deficiency. Activities such as flexion of the lumbar spine, twisting, bending or coughing (which increases the pressure in abdominal cavity) could worsen the symptoms. The strength of the ailments may vary from gentle paraesthesia, light pain to even motor deficiency, which is dependent on the degree of sciatic nerve irritation or damage. The more the nerve is damaged, the more severe are the symptoms [9]. In any case of back pain it is crucial that we eliminate serious causes of such symptoms, a careful, detailed history, combined witch thorough physical examination, aimed at identifying patients with higher risk of serious pathologies is essential [10,11].

The common causes of LBP with sciatic radiation include: lumbar intervertebral disc hernia, lumbar spinal stenosis (in elderly population), spondylolisthesis (vertebra misalignment), Spinal or paraspinal mass or pelvic or lumbar muscular spasm and/or inflammation.

IV. Diagnosing

Typical examination, aimed at diagnosing sciatica or sciatic nerve irritation in family medicine consist of straight leg raise and compressive test (axial compression). Straight leg raise is performed where the patient lies in a supine position, and the painful leg is raised by

the examiner from the posterior aspect flexing at the hip joint and keeping the knee in full extension, or keeping the leg straight. Typically, the patient report a pain sensation between 30° to 70° of hip flexion in cases of lumbar disc herniation. The most likely cause of pain and paraesthesis is lateralized disc herniation causing compression and irritation of affected nerve. In cases of musculoskeletal disorders, typically, pain will appear with flexion above 70° and/or below 30°. It is crucial to check if the muscle strength in the thigh, hamstrings and foot, along with quadriceps and Aquileal reflexes are symmetrical in both lower limbs. The patient can be sitting with his legs hanging or laying down. Strength should be evaluated against gravity and resistance. During examination a physician should also take into consideration Waddell signs, which include: superficial or nonanatomic tenderness, non-reproducibility of pain with distraction, regional weakness or sensory change, overreaction or exaggerated pain response. They indicate non-organic or psychological component of LBP. Finally, arterial pulses should be felt to complete the evaluation in order to rule out vascular pathologies [12]. The compressive test aimes at identyfing the spine region causing the symptoms. It is conducted by pressing on the top of the patients head while he stands erect, without any pathological curvatures. In the moment of applying pressure the patient might feel a pain sensation afflicted region of spine. In cases with indications of higher risk of aforementioned causes, it is recommended to diagnose them accordingly, using X-ray imaging or MRI.

All causes of lower back pain with sciatic radiation that ought to be included in differential diagnosis are: degenerative disc disease, facet joint arthropathy and pseudo-radiculopathy, pyramidal syndrome (caused by the piriform muscle compressing the sciatic nerve as it exists the pelvis, thus producing radiating pain that can be confused with the L5 root compression), myofascial (muscle spasm) pain, annular tears of the nucleus pulposis, ligamentous pain of the spinal ligaments, herniated nucleus pulposis and radiculopathy (pinched nerve) Bertolotti's syndrome (lumbar spine), failed back surgery syndrome, medical (diabetes, hypothyroidism, hypovitaminosis D, etc.), rheumatologic causes of back pain (ankylosing spondylitis, rheumatoid arthritis, Sjogren's syndrome etc.), infectious diseases (Lyme disease, neurosyphilis, etc.), neoplastic (lymphoma, gammopathy, paraneoplastic syndromes, etc.) [13–15]

Diagnostic testing for the cause of symptoms should be conducted after thorough history and physical examination. It should include: plain lumbar spine films with flexion and extension views, computer tomography scam, MRI of lumbar spine, electromyography and blood tests. According to actual guidelines, in order to avoid unnecessary imaging or testing, diagnostic test should be conducted if the symptoms last longer than six weeks or "red flags" are present [16–25]. "Red flags" are factors that may indicate different sources of patients symptoms and present the need for further diagnostic testing, they are present in [Table 1].

Table 1. "Red flags" in diagnosing LBP with sciatic radiation		
Radiculopathy	Uveitis	Motor deficits
Gait disturbance	Night pain	Saddle anesthesia
No response to NSAIDs	Morning stiffness	Fever
Raised erythrocyte sedimentation rate	Loss of anal sphincter tone/fecal incontinence	Age, under 20 years and over 50 years
Sexual dysfunction	Non-mechanical pain	Steroid use

Tenderness over the spine	Systemically unwell	Urinary retention or incontinence
Anemia	Spinal malformations	Weight loss
Neurological impairment		

Imaging should be implemented in diagnosis gradually, starting off with X-ray of the lumbosacral spine to rule out fractures, spondylolisthesis or instability. Next step would be non-contrast CT, with ability to more accurately reveal aforementioned causes. The last resort of diagnostic imaging is MRI, it is used after six to eight weeks of continuous pain without any response to treatment, though MRI may be used as an imaging of choice in cases with suspected mass effect or acute onset of neurologic deficit [26]. The most common changes in lumbar imaging are included in [Table 2]

Table 2. Most common changes in lumbar imaging [15]
Osteoarthritis, which includes the presence of osteophytes, disk degeneration, and facet degeneration
Herniated disk or disk protrusion, which are of relevance when a nerve root or the spinal cord are compressed. They could be central (medial), left/right (paramedial, the most frequent), or lateral (foraminal).
Disk bulge, when the disc protrudes but without compromising the nerve. These findings are usually unrelated to the patient's symptoms.
Spondylolisthesis, when the upper vertebrae slides forward over the one beneath. There are different grades depending on the percentage of the slide: grade 1 (<25%), grade 2 (25–50%), grade 3 (50–75%), and grade 4 (>75%). This listhesis causes narrowing of the spinal canal and thereby, the compression of the exiting nerves passing towards the exit level situated bellow. It is most frequent at L5/S1 level, followed by L4-L5.

EMG (electromyography), though in use and may add valuable date, in cases of LBP and sciatica in practice of family physicians does not play important part in diagnosing. It could reveal nerve roots directly affected and evaluate impairment, but it has little value in defining the cause and also is not usually available for family physicians [27]

Easily accessible, yet import, are blood test which may provide surprisingly useful data. Usually in differential diagnosis should be included: ANA, CK, C-reactive protein, rheumatoid factor, hemogram, liver panel, coagulation, proteinogram, thyroid and kidney test, glucose and HbA1c. These test are key in considering inflammatory processes and possible long-term effects of other conditions, usually diabetes or hepatic failure.
The most crucial elements of diagnosing still remain the characteristics of symptoms and thorough physical examination. Other test, including imaging and laboratory test, should be

treated as an extension of physical examination, targeted on confirming or ruling out suspected causes of ailments.

V. Available treatment options

Physiotherapy

The most fundamental intervention in patients experiencing LBP or/and sciatica is nonpharmacological. It is crucial that nonpharmacological treatment stays the first step in approaching lower back pain or sciatica. Firstly, patients' life style should be examined for potential causes of pain. Overweight, obesity, low-physical activity, and intensive physical labour are usually the first to address [28]. It should be noted that smoking has been shown to accelerate the degenerative process and decreases muscle of oxygenation, and based on that information, patients should be encouraged to quit [29]

In cases where obesity/overweight, or physical labour are not present, or after addressing those factors, the next step is physiotherapy. Physiotherapy remains a key element in treatment of LBP and sciatica. It usually includes improving core strength, core mechanics and flexibility and also promotion of proper posture [23]. Proper, case-oriented, exercised proved to capable of reducing the pain experienced by the patient and also lowering the amount of high-risk medications use [30]. The exercise program should consist of spinal stabilization and core muscle strengthening. In stabilization of the spine, isometric strengthening are most important. It is also important to avoid high-impact exercises (for example running or lifting weights), and to promote ultra low-impact exercises such as swimming (it is also beneficial to maintain adequate form while swimming, with heal aligned with the rest of the body in straight line, and avoid constant lift of head above water). The Danish multidisciplinary guidelines recommend considering supervised exercises as an addition to usual care. Supervised exercise therapy includes directional exercises, motor control exercise, nerve mobilisation, or strength exercises. But no specific recommendation for a specific type of exercise treatment was made [31]. Commonly uses in LBP treatment is also spinal manual therapy (SMT), it is a variety of techniques that encompass any manual technique that moves one or more joints within normal ranges of motion with the aim of improving spinal joint motion or function. It is also easily possible to add different exercises to be done in daily routines, Range of motion, stretching, and attention to proper posture are critical [32]. Many factors affecting spinal rigidity are easily addressed, inciting activities during prolonged sitting/standing and practicing good, erect posture are of high importance. Ergonomic considerations would be to use appropriate back and arm supports on the chair, proper seating height, and avoidance of prolonged abnormal postures at work.

Overall, implementation of physiotherapy, including SMT and home-based exercises, decreases pain intensity and functional limitations [28]. Effects of such therapy usually are visible after 6-12 months of regular exercises, but are long-lasting and first improvements may be noticeable even in 4-8 weeks.

Pharmacological therapy

Next step in approaching LBP or sciatica is pharmacological therapy, it can be used as a separate form of therapy or be combined with physiotherapy. Commonly used medications include non-steroidal anti-inflammatory drugs (NSAIDs), muscle relaxants, pain medications and antiepileptic drugs, including gabapentin, pregabalin and duloxetine, which in recent years have shown effects in treatment of LBP and sciatica [33]. In cases with severe pain narcotic treatment is a valid option. NSAIDs and myorelaxants prove to be the most effective in short term, providing decrease in pain in close to 1 week [34], this combination proved also to be the most beneficial over all, bringing relief in short term and having a reasonable benefit to risk ratio. Different NSAIDs can be used, it should depend on patients' reaction

which one will be used. From myorelaxants tizanidine and cyclobenzaprine seem to be reasonable options , providing good results with low potential risks. The membrane-stabilizing drugs such as gabapentin and pregabalin are useful mainly for neuropathic sciatic pain, but different results can be found on such treatment, we lack hard evidence to support such treatment and its use is in conclusion “off-label”. There are also studies which undermine their use, showing no benefits in pain relief and mobility compared to placebo [34]. In cases witch severe pain, that is not adequately relieved witch conventional methods, use of narcotics is justified. Such therapy usually includes tramadol, which is a weak opioid, but a strong pain medication overall. It is also crucial to nota that such therapy should not be chronic, and be implemented only in peaks of pain sensation. Chronic use of opioids makes them less effective, and also may cause side effects, including addiction and hyperalgesia [35]. Facet and lumbar epidural steroid injections provide good temporary improvement with reducing pain and increasing mobility, effects are even comparable to surgical intervention by discectomy [36]. Spinal infiltrations can be used for diagnostic or therapeutic purposes. When used diagnostically, local anaesthetic is applied to the structure suspected to be the source of pain (mainly the facets, epidural, or the root exiting the foramen), and a positive response is considered predictive of good response to other manoeuvres applied to that area. In cases of therapeutical injections , they are usually conducted with a combination of corticosteroid and local anaesthetic (bupivacaine or mepivacaine). Such procedures do not cure the illness, but the do provide long lasting relief by reducing the inflammation and relieving pain. Those effect may prove to be of great importance, allowing patients to continue increasing core strength and battle the cause of symptoms.

Invasive methods

Another form of therapy is neurodestructive procedures of affected nerves, with a goal of long-term relief of pain and mobility increase. There procedures are neurolysis and rhizolysis. Most common methods include using injections of ethanol or phenol, or destruction of nerve by temperature (radiofrequency). Radiofrequency ablation is mainly used to achieve facet denervation, although it can also be used to treat root ganglions at the neural foramina to palliate or cure chronic unresolved radiculitis [37,38]. By using precise temperatures, we are able to hinder only pain transmission, without impairing movement functions. Effects of such therapy vary, some patients note complete pain relief, other just partial, also lasting of effects differ, but their effects are undeniable [39].

There is also possibility of implanting epidural electrodes powered by a generator, which will stimulate spinal cord providing documented relief from pain. The generator may be internalized in a subcutaneous pocket, minimizing visual effects and adding convenience. The primary indications for spinal cord stimulation are failed back surgery syndrome (FBSS) and complex regional pain syndromes type I and type II. Although there are ongoing studies, there are no current indications for upfront implantation of epidural electrodes for the treatment of low back pain (LBP) of spondylotic origin. This therapy is expensive, and its cost-effectiveness is always an issue. There is also an issue of limited availability due to the low amount of facilities conducting such procedures [39]. It should also be noted that combined treatment with medial branch block (MBB) and facet joint injections (FJI) did not prove to be superior to using those methods alone, also combining them required a longer intervention time [39]. Another invasive method is chemonucleolysis, which is used when dealing with cases of disc herniation. Disc herniation is one of probable causes of LBP or sciatica, in such cases chemonucleolysis may be taken into consideration for a method of treatment. It is conducted by injecting enzymes to chemically degrade herniated disc. With the introduction of new enzyme used, chondrotinase, such approach presents itself as a viable option in

treating LBP. While still in early ages of development, it was already implemented, and shown promise. Further randomized trials are necessary to solidify its position, but in already available research, it has shown effects comparable to surgical interventions [40].

Surgery

In terms of lower back pain and sciatica surgery takes place as a last resort approach. It is taken into consideration only if all other methods proved to be unsatisfactory. If despite of nonpharmacological and pharmacological approaches combined, patient still suffers from pain and limitations in mobility, then a surgical treatment might be considered. The general principal of surgical approach is to keep to the least destructive procedure, minimizing side effects and maximizing patients' comfort. Due to many side effects of such treatment, the goal of it should be to ease patients symptoms, but not to erase them. Patients ought to be informed of the fact that surgical treatment does not provide complete relief. Only in cases where neurological deficits are present due to compression of a neural structure (either nerve root or spinal cord), and especially if the deficit is progressive, the surgical option must be considered upfront. It is also important to mention that recent studies have shown that the effects of surgical treatment is comparable to, or even worse than those of other invasive methods [39,41].

Mechanical LBP or spinal instability (shown usually in X-ray imaging) is an indication that stabilizing procedure might prove most effective. In cases of radiating pain or neural claudication, decompressing affected structures proved most beneficial.

1. Nerve decompression: roots are commonly compresses as they exit through the intervertebral foramen, they can be pinched by bulging disc anteriorly or by the facet joints posteriorly. There is also possibility of both those circumstances to occur simultaneously. Three different approaches are possible, anteriorly, posteriorly or laterally. Anterior approach is usually the most complicated, thus used rarely. It requires moving contents of abdominal cavity to reach destination. Also it bears the risk of damaging big vessels and presacral plexus, both of these possibilities have a high probability of long-term or even permanent conditions. Classic micro-discectomy and foraminotomy (widening the foramen that the nerve travels) are the choice when preforming posterior approach. In cases where spinal canal is narrow, a decompressive laminectomy could be performed by this route [42]. Lateral approach is rarely used, when chosen, minimally invasive route is mostly picked, such as endoscopic transforaminal approach, which is gaining popularity, yet it still lacks scientific backing.
2. Nerve root decompression and segment stabilization: typically chosen in cases with spondylolisthesis. It aims to achieve a nerve decompression and a solid fusion between the vertebrae considered instable, granting patient pain reduction with a minimal or zero reduction in mobility. Available approaches are similar to those aforementioned, anterior, posterior and lateral [43]. In anterior approach, intervertebral disc is removed from the spine and replaced with interbody device, with purpose of achieving solid fusion. When approached posteriorly different techniques are available, all of them are based on using hardware (transpedicular screws are the most common by far) and bone graft to achieve solid fusion. In the recent years later approach has been gaining popularity for the levels L3 and above. Below L4, the laterally-placed iliac crest could pose a technical challenge [43]. It should be mentioned that none of the surgical techniques (open, minimally invasive, aimed at achieving intertransverse fusion or intersomatic fusion, etc.) has proven to be vastly superior

compared to others. The decision on which one to decide on should be based on available information, patients' history, imaging and surgical team experience, as long as acceptable decompression and fusion is achieved.

Other methods

Due to the fact that LBP is the most common source of disability globally, apart from conventional methods, many other treatments are available. They vary in result and research backing their effectiveness, but they still may pose a viable option for patients in different stages of LBP treatment.

One of the methods that show promise and may prove beneficial in pain management in cases of sciatica is meditation. In comparison to minimal intervention there is evidence that mediation presents beneficial effects for patients suffering from LBP and sciatica. Study shows that it provides help in terms of pain and mental health, but in case of disability no visible affect was noted. Meditation proved to be most effective in long-term effects regarding pain and mental-health. However, no difference in anxiety or depression was found in short-term follow ups. In cases of short and intermediate-term, no visible results were recorded according to Soares et al. [44]. When compared to usual care, for pain intensity, in short and intermediate term, no visible results were found. At long-term follow up, based on low certainty evidence there was a significant difference in pain intensity. Regarding disability, no difference between mediation and usual care was found at any period of time. For mental health the results were similar to those comparing meditation to minimal intervention, in short and intermediate-term no results were notable, in case of long-term results, there is a low quality evidence that meditation had significant effects [44]. In conclusion, meditation may provide patients with additional relief in pain and possible positive effect on mental health, however all evidence is of low quality. It still may be offered to patients due to near zero risks in such form of treatment.

Another form of treatment that may be used as an addition to conventional methods is acupuncture. It has been demonstrated that acupuncture can block the transmission of pain by releasing Ca++, K+, 5-hydroxytryptamine and opioid peptides [45]. Also, the analgesic effect of acupuncture is concerned with adenosine triphosphate (ATP), which is involved in muscle contraction and relaxation,73 and inflammation [46]. The sensory and sympathetic nerve fibers in the blood vessels are more numerous in the distal segments (hands and feet) than in the proximal ones. That is the reason why the distal point is preferred for stronger stimulation transmission in acupuncture [47]. Needle manipulation such as lifting and thrusting alters the structure of fibroblasts by causing deformation of the connective tissues. The ATP released by these micro-damages is broken down partially into adenosine and other purines. Both ATP and adenosine block pain through purinergic receptors as anti-nociception agents [48]. In recent years there were number of studies conducted, which aimed at comparing the effects of acupuncture in treatment of LBP and sciatica. Studies with functional MRI have shown that skin or muscle stimulation of sham or classical acupuncture, respectively, may modulate pain through nerve activation [49]. It was noted that patients who were treated with acupuncture experienced less pain and their pain threshold was elevated com-pared to conventional analgesic. Total effective rate (TER) was also significantly higher than that done in analgesic group. In conclusion, there are reviews that indicate that acupuncture may be more effective then analgesics for sciatica [48]. It must by noted that, as acupuncture is performed according to diagnostic principle of oriental medicine, it is recommended to consult with a licensed acupuncturist for the treatment. In the future, studies with rigorous study designs and follow-

ups are required to increase the validity of the effectiveness and safety of acupuncture for sciatica.

VI. Conclusions

Due to ever increasing numbers of patients suffering from sciatica and lower back pain, the significance of knowledge in that field has never been more greater. Family physicians will encounter patients with such symptoms almost daily, it is necessary to have at least basic knowledge of code of conduct in such cases. Diagnostic process should start witch thorough physical examination and detailed description of symptoms, that could led to further diagnostic procedures. Diagnosis of sciatica or LBP may be based just on physical examination and anamnesis, but in search for possible causes of such symptoms, more advanced procedures may be performed. X-ray is the most basic imaging technique used in sciatica and LBP, it may for example show damage in spine, next step would be non-contrast CT, with ability to more accurately reveal aforementioned causes. Finally, MRI is used after six to eight weeks of continuous pain without any response to treatment, though MRI may be used as an imaging of choice in cases with suspected mass effect or acute onset of neurologic deficit. Blood test may provide useful data. Usually in differential diagnosis should be included: ANA, CK, C-reactive protein, rheumatoid factor, hemogram, liver panel, coagulation, proteinogram, thyroid and kidney test, glucose and HbA1c. There are many different treatments available, most fundamental one being physiotherapy. However it is rarely the only for of therapy, it is usually combined with pharmacological approach, which includes non-steroidal anti-inflammatory drugs (NSAIDs), muscle relaxants, pain medications and antiepileptic drugs, including gabapentin, pregabalin and duloxetine, which in recent years have shown effects in treatment of LBP and sciatica. In cases with severe pain narcotic treatment is a valid option. Facet and lumbar epidural steroid injections provide good temporary improvement with reducing pain and increasing mobility, effects are even comparable to surgical intervention by discectomy. There is also an array of invasive neurodestructive procedures of affected nerves available, with a goal of long-term relief of pain and mobility increase. There procedures are neurolysis and rhizolysis. Most common methods include using injections of ethanol or phenol, or destruction of nerve by temperature (radiofrequency). In terms of lower back pain and sciatica surgery takes place as a last resort approach. It is taken into consideration only if all other methods proved to be unsatisfactory. In such approach there are few methods usually taken into consideration, neural tissue decompression and neural tissue decompression and segment stabilization (also called spinal fusion). The decision on which method to use should be made depending on patients' symptoms and results of imaging. Alternative methods, such as acupuncture and mediation may be included in treatment programme, however they lack proof to be sufficient as only form of therapy. Even thou, sciatica and LBP are very common, and have been studied for many decades, there still is a need for a form of therapy that would provide patients with easily accessible, fast, risk free and effective form of therapy. Giving pain relief and restoring mobility through minimizing disability. Further research is crucial as much as education for general practitioners and family physicians to help combat the growing numbers of sciatica and lower back pain.

Disclosure

Author's contribution

Conceptualization: Maciej Gołębski; Methodology: Wojciech Nowak; Software: Jagoda Mikołajczyk; Formal analysis: Zuzanna Kukla and Stella Mieruszyńska; Data management: Paulina Krzemińska; Resources and research: Mirosław Sawicki and Izabela Sadowska;

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