literature [2-4]. It has been shown that mutations in a factor the V Leiden (FVL) and FII 20210A prothrombin in a heterozygotic state significantly increase the risk for thrombosis in the general population. However, whether those mutations are associated with thrombophilia in endurance athletes is unknown.

To examine the prevalence of prothrombotic mutations (FVL and FII 220210A) in Russian elite endurance athletes compared to the general population.

264 endurance athletes (mean age = 26.5, SD = 10.3) and 295 unrelated sedentary controls (mean age = 31.3, SD = 10.4) participated in the study. The endurance athletes group included cross-country skiers and biathlonists (n = 62), triathlonists (n = 18), walkers (n = 14), ice hockey players (n = 152), 5Km/10Km long distance skaters (n = 14), ≥5 Km runners (n = 3), and one bicycle racer. 88 athletes are winners and prize-winners of the international competitions (”elite group”). All participants were self-reported unrelated Caucasians for ≥3 generations. Written informed consent and information on diseases of cardiovascular system and pathology of haemostasis were received from all the participants. Buccal epithelium or peripheral blood was used to isolate genomic DNA with the GeneJET™ Genomic DNA Purification Kit (Thermo Fisher Scientific Inc.). Genotyping of the FVL and FII 220210A mutations was performed using TaqMan® SNP genotyping assays with a StepOne™ Real-Time PCR System (Thermo Fisher Scientific Inc.). For replication purpose, 30% of the samples were analysed twice. Positive control samples (heterozygotes on FVL and FII 20210A) were included in each experiment. Statistical analysis was performed with IBM SPSS Statistics 21.

None of the participants had the burdened thrombotic anamnesis. None of the athletes and controls carried the FVL and FII 220210A pathological mutation. Interestingly, higher levels of heterozygotes of prothrombotic mutations were found in the endurance athletes, but it has not reached the statistical significance threshold (0.05). The genotype frequencies are presented in Table 1.

Abstract P-74 Table 1 The prevalence of prothrombotic mutations (FVL and FII 220210A) in the Russian cohort

Sample	Heterozygotes			
	FII 20210A		FVL	
	Frequencies	95% CI*	Frequencies	95% CI
Controls (N = 295)	2.4	0.70 – 4.1	1.7	0.2 – 3.2
All athletes (N = 264)	3.0	0.9 – 5.1	4.5	2.0 – 7.0
Elite group (N = 88)	6.9	1.6 – 12.2	4.6	0.2 – 9.0

* 95% CI = 95% Confidence Interval.

In conclusion, the prevalence of the FVL and FII 20210A prothrombotic mutations in Russian elite endurance athletes is slightly higher (not significant) than in sedentary controls. Multicentre approach to increase the sample size is required to detect the influence of a rare mutation on the athletic phenotype.

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P-75 PROLOTHERAPY FOR CARPAL TUNNEL SYNDROME: A CASE REPORT

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Carpal tunnel syndrome (CTS) is the most frequent entrapment neuropathy, which occurs as a consequence of compression of the median nerve at the wrist. The diagnosis is usually based on characteristic symptoms and signs, electrophysiological and sometimes sonographic studies. The most common symptoms are pain and numbness with a tingling sensation along the median nerve distribution in the hands. Treatment of CTS can be classified as surgical and nonsurgical. Non-surgical treatments include options such as splinting, corticosteroid injections, non-steroidal anti-inflammatory drugs (NSAID), B6 vitamin, diuretics, ultrasound therapy, ergonomic positioning, manual therapy intervention, lidocaine patches, acupuncture and prolotheraphy (PrT). Treatment decisions on carpal tunnel syndrome are based on the severity of the symptoms.

PrT is an injection-based technique for treatment of chronic musculoskeletal pain including tendinopathy. Within the attachment of weakened ligaments and tendons to bone, the sensory nerves become overstimulated by abnormal tension to become not only the origin of specific local pain, but also definite areas of referred pain throughout the body to as far as the head, fingers and toes from specific relaxed ligaments and tendons. PrT is a treatment to permanently strengthen the “weld” of disabled ligaments and tendons to bone by stimulating the production of new bone and fibrous tissue cells has been developed. Hypertonic dextrose and morrhuate sodium are common injectants used in prior pilot-level randomised controlled trials. There is no study about the efficacy of PrT for CTS in the literature. The purpose of this case is to show the effect of PrT in CTS.

Forty-two years old recreational female athlete had bilateral CTS for 6 months. NSAID, B6 vitamin and ultrasound therapy were used. Symptoms eased but healing was not completed. Hypertonic dextrose was used for PrT. 2 mL of the PrT solution was injected onto bone at the enthesis of the transverse carpal ligament (compatible with sensitive areas of hamate, pisiform, scaphoid and trapezium) (22G, 1.5″ long needle). Injections were done 2 weeks apart and 3 injections were done. Patient was prescribed with a home standard exercise program. Patient was reminded at each contact to avoid NSAIDs and new therapies for CTS and to limit overuse of the wrist during the treatment period. The Visual Analogue Scale (VAS), DASH (The Disability of the Arm, Shoulder and Hand) score and electromyography were assessed at baseline and 50 days after last injections.

The VAS scale showed a significant improvement: the baseline score of 9 decreased to 4 and the DASH score showed a similar positive trend: the baseline score of 99.34 decreased to 49.34 at 50 days after last injections. The median sensory nerve conduction velocity also showed an improvement: the baseline right median sensory velocity (MSV) increased 39,2 m/s to 45 m/s and left MSV increased 48,9 m/s to 50,4 m/s at 50 days after last injections.

PrT resulted in safe, significant improvement of wrist pain and function compared to baseline status. More studies that include more cases and comparison of other CTS treatments are needed in the future.

P-75 Prolotherapy for carpal tunnel syndrome: a case report

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Notes