

Strategies for literature search in testicular torsion :

Databases: SCI-EXPANDED, CPCI-S, CPCI-SSH, BKCI-S, BKCI-SSH

#1: TI=("spermatic cord torsion*") OR TI=("twisting of the spermatic cord") OR TI=("torsion of testicular cord") OR TI=("testicular torsion*") OR TI=("pediatric testicular torsion")

#2: AB=("spermatic cord torsion*") OR AB=("twisting of the spermatic cord") OR AB=("torsion of testicular cord") OR AB=("testicular torsion*") OR AB=("pediatric testicular torsion")

((#1 OR #2) AND DT=(Article)) AND LA=(English)

DOP: 2000-01-01 to 2022-11-01

Table S1 Ranking of top 30 high-frequency keyword in the testicular torsion study

| Rank | Count | Year | Keyword | Rank | Count | Year | Keyword |
|------|-------|------|-----------------------------|------|-------|------|--------------------------|
| 1 | 700 | 2000 | testicular torsion | 16 | 47 | 2000 | contralateral testi |
| 2 | 235 | 2000 | ischemia reperfusion injury | 17 | 46 | 2000 | nitric oxide |
| 3 | 169 | 2000 | testi | 18 | 45 | 2000 | color doppler sonography |
| 4 | 157 | 2000 | children | 19 | 45 | 2000 | injury |
| 5 | 156 | 2001 | apoptosis | 20 | 45 | 2000 | spermatogenesis |
| 6 | 133 | 2000 | acute scrotum | 21 | 44 | 2000 | blood flow |
| 7 | 129 | 2004 | oxidative stress | 22 | 44 | 2000 | ischemia |
| 8 | 101 | 2000 | diagnosis | 23 | 41 | 2013 | risk |
| 9 | 88 | 2000 | management | 24 | 38 | 2001 | mechanism |
| 10 | 86 | 2001 | damage | 25 | 38 | 2013 | orchietomy |
| 11 | 83 | 2001 | expression | 26 | 37 | 2003 | teste |
| 12 | 61 | 2001 | rat | 27 | 34 | 2000 | ultrasonography |
| 13 | 55 | 2000 | ultrasound | 28 | 33 | 2000 | sonography |
| 14 | 50 | 2000 | detorsion | 29 | 30 | 2004 | antioxidant |
| 15 | 49 | 2001 | tissue | 30 | 26 | 2005 | exploration |

Table S2 Ranking of top 14 keywords main clusters in testicular torsion from 2000 to 2022

| Cluster ID | Size | Sihouette | Mean year | Label (LLR, log-likelihood ratio) |
|------------|------|-----------|-----------|---|
| #0 | 53 | 0.913 | 2007 | acute scrotum; ischemia-reperfusion injury; testicular torsion detorsion; tissue; diagnosis |
| #1 | 47 | 0.958 | 2006 | oxidative stress; apoptosis; children; management; tunica albuginea |
| #2 | 45 | 0.867 | 2007 | expression; cell survival; acute scrotum; nitric oxide synthase; adhesion molecules |

| | | | | |
|-----|----|-------|------|---|
| #3 | 42 | 0.891 | 2005 | acute scrotum; magnetic resonance imaging; oxidative stress; sonography; exploration |
| #4 | 41 | 0.91 | 2005 | testicular trauma; diagnosis; children; spermatic cord; color doppler sonography |
| #5 | 40 | 0.95 | 2005 | male infertility; pioglitazone; testicular ischaemia; testes torsion; antioxidant |
| #6 | 39 | 0.936 | 2002 | melatonin; teste; testicular cancer; hcg stimulation; acid t-lymphocytes; testicular tumor; ejaculation; purinergic transmission; tnf-alpha/tnfr1 |
| #7 | 37 | 0.941 | 2005 | free oxygen radicals; epidermal growth factor; male reproductive tract; garlic extract; sphingosine-1-phosphate |
| #8 | 35 | 0.88 | 2006 | testi; climate; erythropoietin; testicular ischemia-reperfusion; basal membrane |
| #9 | 34 | 0.928 | 2003 | undescended testis; testis-undescended; testis-torsion; minimally invasive surgery; testis-nonpalpable |
| #10 | 34 | 0.964 | 2004 | acute scrotal pain; management; newborn; apoptosis; oxidative stress |
| #11 | 33 | 0.976 | 2006 | reperfusion injury; nitric oxide; contralateral testis; sildenafil; acute scrotum |
| #12 | 32 | 0.876 | 2007 | cryptorchidism; delay; pediatric urology; orchiectomy; orchiopexy |
| #13 | 32 | 0.924 | 2006 | |

Top 30 References with the Strongest Citation Bursts

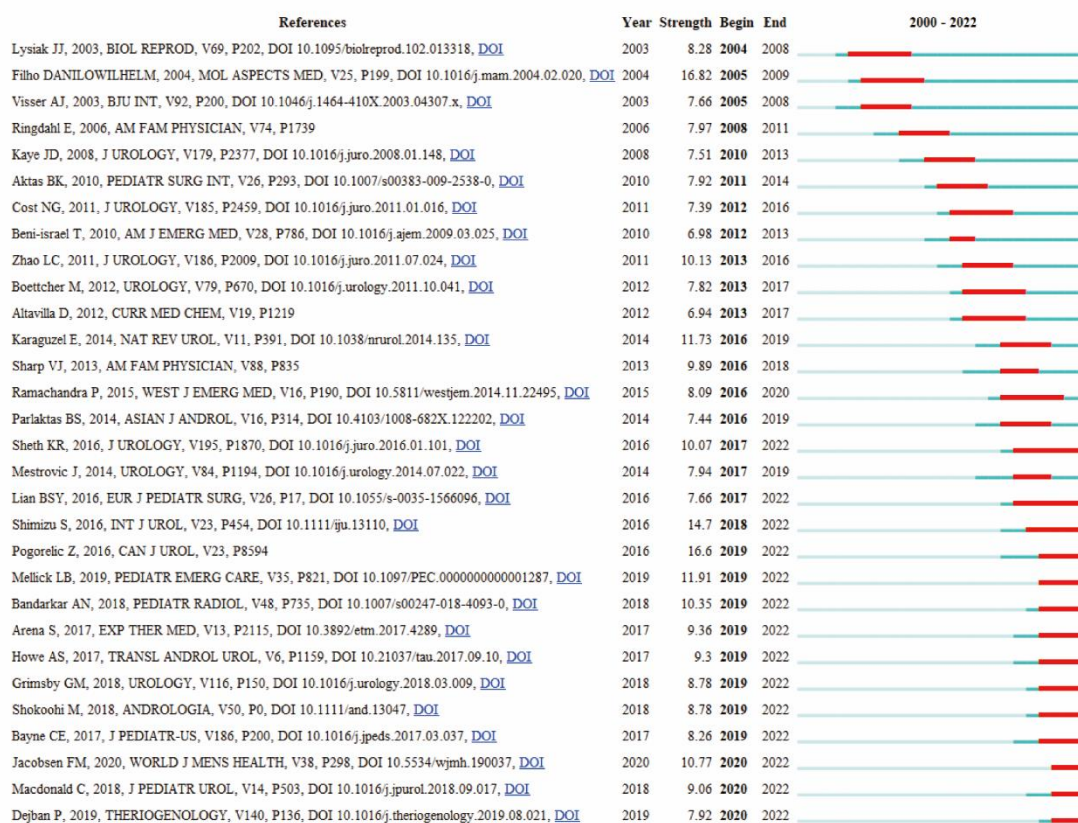


Figure S1 The top 30 cited references sorted by the beginning year of burst. References marked in warm colors indicated a sudden increase in the usage frequency of this reference during that period. Cool colors represented a relatively unpopular time period.