

한방소아과학회지에 출판된 임상연구논문에 대한 분석

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Abstract

Trend Analysis of Clinical Studies Published in the Journal of Pediatrics of Korean Medicine

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Objectives

The purpose of this study is to provide evidence of traditional Korean medicine treatment in children and adolescents by reviewing previous studies published in the journal of pediatrics of Korean medicine.

Methods

We have reviewed clinical studies of children and adolescents in the journal of pediatrics of Korean medicine from 2008 to 2017.

Results

Eighty-seven clinical studies of children and adolescents were reviewed. Total number of patients were 1644 in the studies. Among these, top 5 most commonly reported diseases in children and adolescents were atopic dermatitis, growth, autism, juvenile idiopathic arthritis and obesity. The most common intervention to treat those was taking herbal medicine. Most of the clinical studies showed effectiveness of this approach in treating children and adolescents.

Conclusions

More double-blinded randomized controlled clinical trials of Korean medicine interventions treating children and adolescents are needed to establish evidence-based treatment.

Key words: Clinical studies, Journal of pediatrics of Korean medicine, EBM

I. Introduction

한의학은 축적된 역사적 근거를 바탕으로 건강유지, 질병예방, 질병치료에 있어 국가 보건의료체계의 한 축을 담당해오고 있다^{1,2)}. 근래 근거중심의학의 대두에 따라 한의계는 근거에 기반한 환자 치료 표준화와 보편화에 대한 요구를 지속적으로 받고 있으며, 이와 같은 시대적 요구에 순응하여 한의학계에서도 양질의 근거를 축적하기 위한 임상연구가 활발히 이루어지고 있다^{3,4)}. 2016년부터 추진 중인 3차 한의약 육성발전 종합계획에서도 한의 보장성 강화와 한의 의료 표준화를 목표로 30개 질병에 대한 한의표준임상진료지침서 개발을 진행 중이다⁵⁾.

소아는 태생기부터 성인에 이르기 전까지의 시기로, 성인과 다른 소아 특유의 생리와 병리 소견을 보인다⁶⁾. 한의학은 인체를 전일체로 보며, 治未病하는 사상에 기반하여⁷⁾, 자발적이고 능동적인 예방과 섭생을 중시한다. 이러한 특징은 학령기 아동과 청소년을 포함한 소아 질환의 예방과 치료에 부합한다.

기준에 발표된 임상연구를 분석한 연구들은 소아의 특정 질환에 대한 동향을 보고한 연구가 주로 이루어졌으며⁸⁻¹⁰⁾, 한방소아과학회지에 보고된 임상논문은 고찰한 1건의 연구가 보고된 바 있다¹¹⁾. 그러나 보고된 시일이 10년 이상 경과하였고, 임상연구 연도별 연구 디자인, 질평명, 연구기관 정도의 정보만을 제시하여 소아의 한방치료 동향을 파악하기에는 부족하였다.

이에 한방소아과학회지에 게재된 임상연구 중 질병에 대해 한의치료가 이루어진 연구논문을 조사하여, 소아의 한방치료와 관련된 임상연구 동향을 파악하여 향후 연구수행을 위한 기초자료로 활용되는데 기여하고자 한다.

II. Materials and Methods

1. 연구대상

본 연구는 2008년부터 2017년까지, 10년간 한방소아과학회지에 게재된 335편의 논문을 대상으로 하였다.

2. 포함기준

본 연구에서는 질환을 막론하고, 소아 환자를 대상으로 포함한 임상연구 중에서 한의학 관련 치료법을 사용한 경우를 대상으로 하였다. 한의학 관련 치료법은 침, 전침, 약침, 한약, 뜸, 부항, 상담 등 한의의료기 관에서 사용하고 있는 모든 치료법으로 간주하였다.

3. 제외기준

검색된 문헌의 제외기준은 다음과 같다.

- ① 단행본, 학술대회 발표 자료 등 논문 형식(서론, 연구방법, 결과, 고찰, 결론)을 갖추지 않은 논문
- ② 문헌연구, 실험연구 등 사람을 대상으로 하지 않은 논문
- ③ 설문조사 및 질적연구 방법으로 수행된 논문
- ④ 임상연구이지만 치료를 적용하지 않은 논문

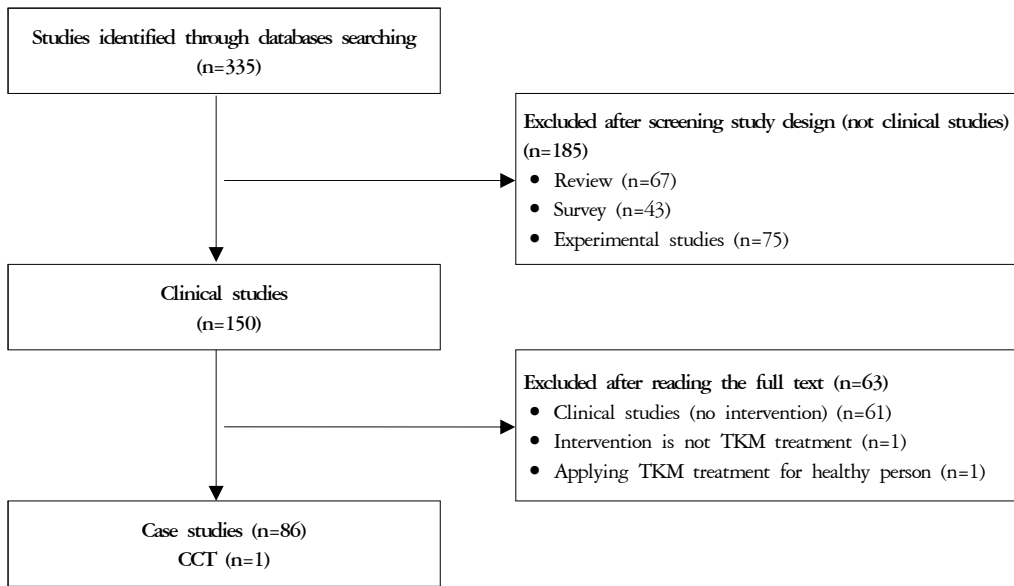
4. 데이터 추출

2명의 저자(Yang DH, Park JK)가 독립적으로 사전에 정의한 기준에 따라 335편의 논문을 분류하였다. 논문 분류는 제목과 초록을 확인하여 분류하였으며, 필요한 경우 논문 원문을 확인하였다. 이후 2명의 저자(Yang DH, Sung HK)가 최종 연구대상으로 선정된 논문의 저자, 임상연구 디자인, 나이, 환자 수, 질병명, 중재법, 평가도구, 평가결과 데이터를 추출하였다. 논문 분류 및 데이터 추출에 대한 의견이 다른 경우 다른 저자(Sung SH)와 논의하여 해결하였다.

III. Results

1. 검색과정 및 결과

2008년부터 2017년까지 한방소아과학회지에 게재된 335편의 논문 중 임상연구는 150편, 문헌연구는 67편, 설문연구는 43편, 실험연구는 75편으로 나타났다. 임상연구 150편 중 중재법을 사용하지 않은 임상연구 61편, 한방치료를 사용하지 않은 임상연구 1편, 건강한 소아에게 한방치료를 적용한 임상연구 1편을 제외하고 총 87편의 임상연구가 본 연구에 포함되었다(Fig. 1). 소아의 한방치료 임상연구에 대한 분석결과는 Table 4와 같다.



CCT: Controlled Clinical Trial, TKM: Traditional Korean Medicine

Fig. 1. Flowchart of study selection process

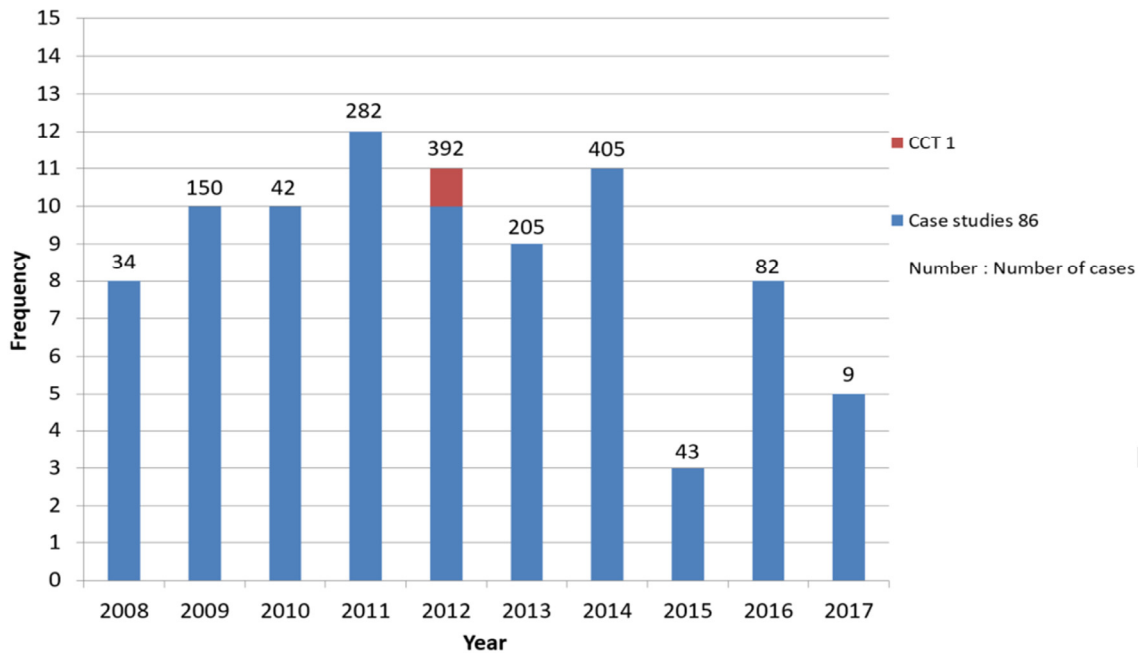


Fig. 2. Study trend of clinical studies and cases by year

2. 문헌형태, 연도별 분류

지난 10년간 발간된 소아 관련 임상연구는 총 87편으로 그 중 86편은 증례연구 (98.9%), 1편은 대조군연구 (1.1%)로 대부분이 증례연구였으며, 2011년에 가장 많은 12편이 발간되었다. 임상논문의 총 소아환자 수는 1644명으로, 2014년이 405명으로 가장 많았다 (Fig. 2).

단일 증례가 보고된 경우가 42편으로 가장 많았고, 다음으로 2건의 증례를 보고한 경우가 9편으로 약

72.4%에서 10건 이하의 증례를 후향적으로 보고하였다. 가장 많은 대상자를 포함한 연구는 284명의 환자를 포함한 1건의 연구가 있었다 (Fig. 3).

3. 질환에 따른 분류

총 87편의 보고된 증례 중 다빈도 질환은 아토피성 피부염, 성장, 자폐스펙트럼장애, 소아 특발성 관절염, 비만 순이었다 (Table 1).

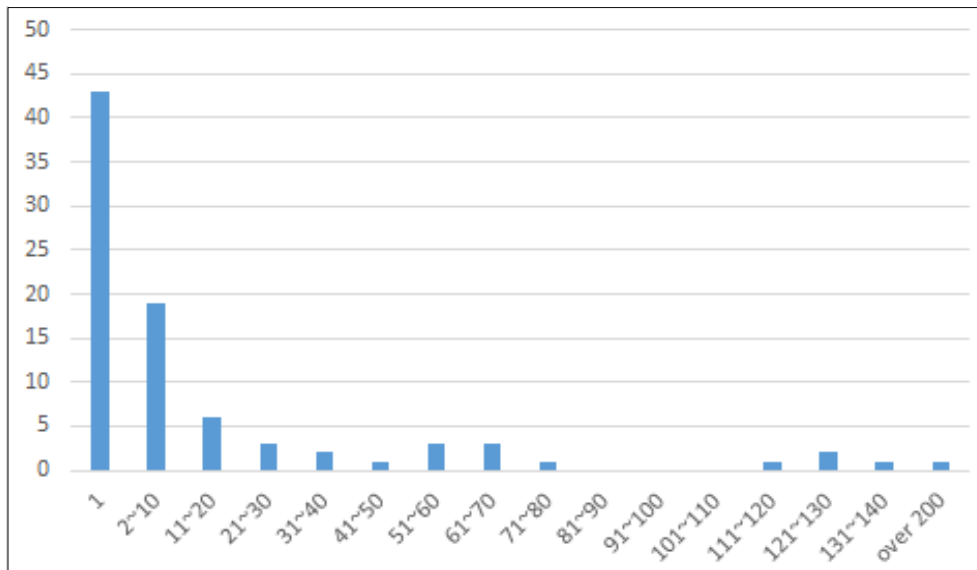


Fig. 3. Patient number distribution

Table 1. Top-five Disease's Intervention of Clinical Studies in the Journal of Pediatrics of Korean Medicine

Disease	Intervention	n (%)
Atopic dermatitis (n=192)	Herbal medicine (n=192)	100%
	Acupuncture (n=43)	22.4%
	Counseling (n=23)	12.0%
	LLLT (n=19)	9.9%
	Atopy care program (n=17)	8.9%
	External wet therapy (n=6)	3.1%
	Lotion (n=6)	3.1%
	Art therapy (n=6)	3.1%
	Relaxation therapy (n=6)	3.1%
	Lifestyle education (n=6)	3.1%
	Food education (n=6)	3.1%
	Wind bathing (n=6)	3.1%
	<i>Horminis placenta</i> external therapy (n=1)	3.1%
Growth (n=504)	Herbal medicine (n=504)	100%
Autism (n=9)	Herbal medicine (n=7)	77.8%
	Acupuncture (n=2)	22.2%
	Herbal medicine extract (n=1)	11.1%
	Electric moxibustion (n=1)	11.1%
Juvenile idiopathic arthritis (n=3)	Herbal medicine (n=3)	100%
Obesity (n=60)	Herbal medicine (n=40)	66.7%
	Balneotherapy (n=20)	33.3%
	Acupuncture (n=1)	1.7%
	Moxibustion (n=1)	1.7%
	Auricular acupuncture (n=1)	1.7%
	Behavior modification (n=1)	1.7%

LLLT: Low level laser therapy

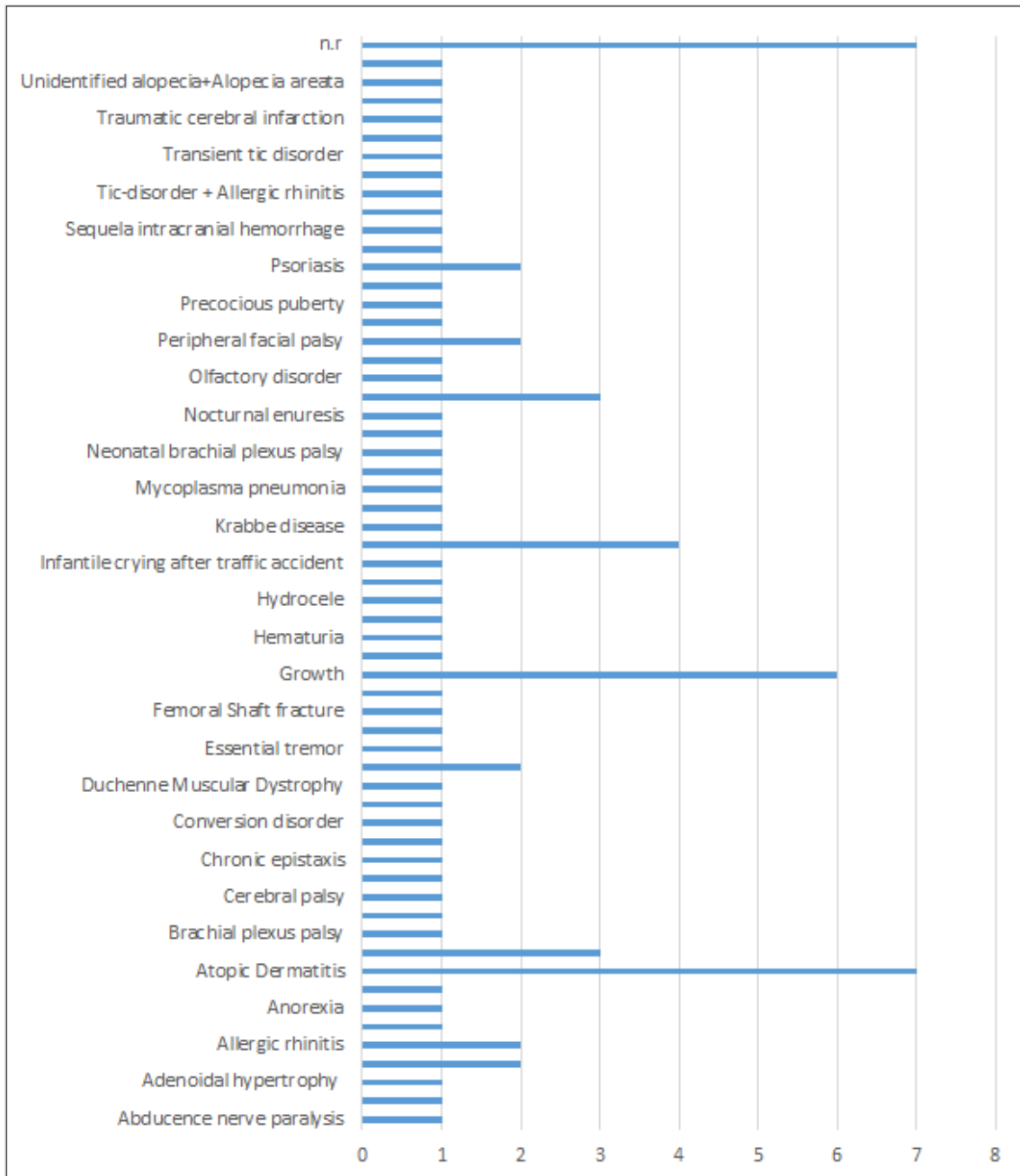
4. 중재방법에 따른 분류

대상 논문에 다용된 중재방법은 한약치료, 뜸치료, 경혈침부요법 등이었다. 상위 5개 질환에 따른 중재방법은, 아토피성 피부염에는 한약치료, 침치료, 상담, 저출력 레이저 요법 (Low level laser therapy, LLLT), 아토피 관리 프로그램, 습포 요법, 자하거 습포 요법, 로션, 미술 치료, 이완 요법, 생활습관 교육, 식이 교육, 풍욕이 사용되었다. 성장에는 한약치료, 자폐스펙트럼장애

에는 한약치료, 침치료, 전자침, 한약추출물 전기식 온구기가 사용되었다. 소아 특발성 관절염에는 한약치료가 사용되었고, 비만에는 한약치료, 침치료, 뜸치료, 이침치료, 행동교정요법, 광천요법이 사용되었다.

5. 유효성 평가 방법에 따른 분류

대상 논문 87편 중 58.6%에서는 객관적인 평가도구를 활용하여 유효성을 평가하였고, 41.4% (36편)에서



n.r.: not reported
 Fig. 4. Chief complaints for clinical studies

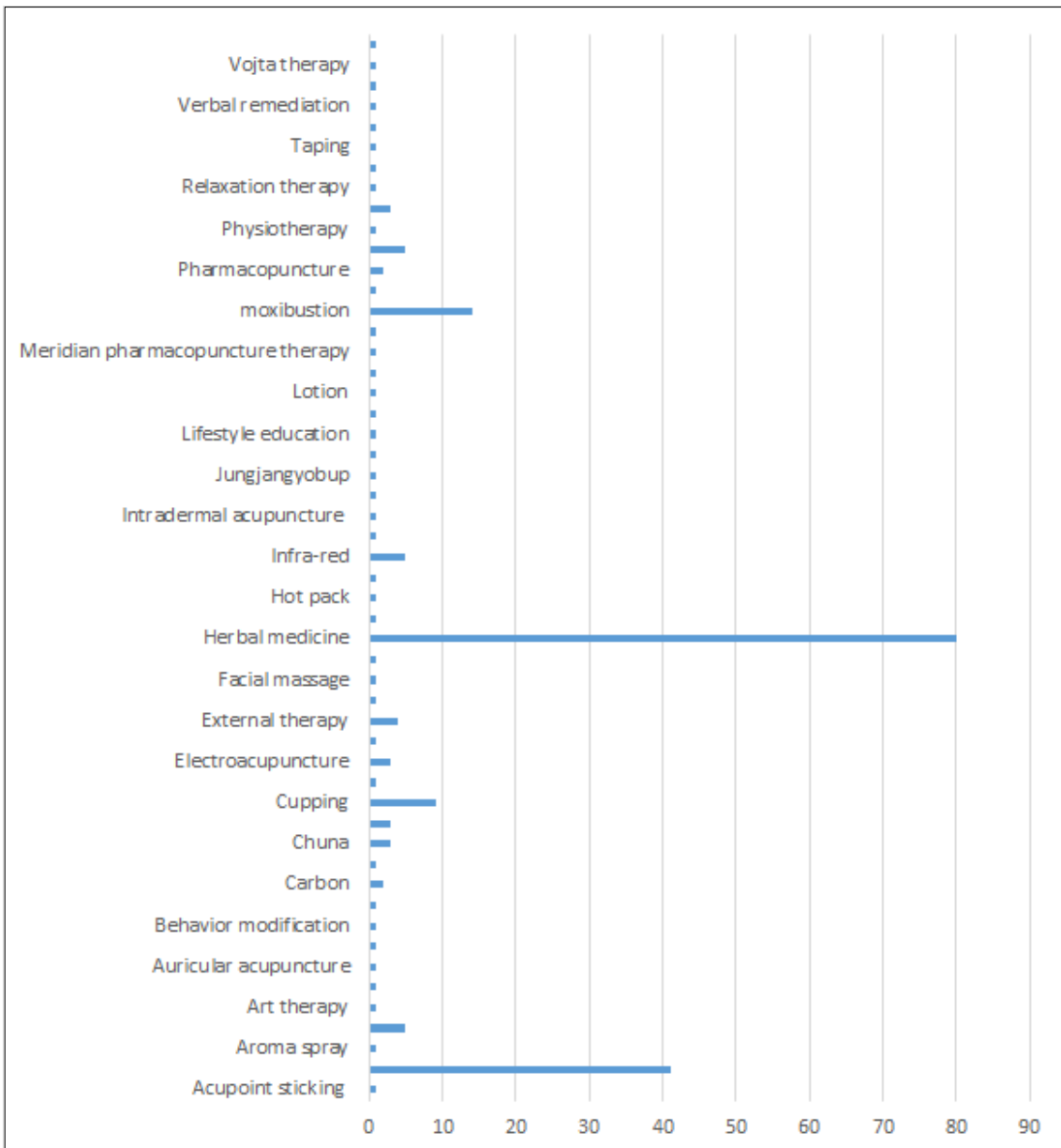


Fig 5. Interventions for clinical studies

는 평가도구 없이 환자의 주관적인 증상의 변화만으로 효과를 평가하였다.

질환의 치료 경과를 평가하기 위해 다음과 같은 도구들이 활용되었다. 아토피성 피부염에는 SCORAD (Scoring atopic dermatitis), 설문조사, EASI (Eczema area and severity index), 증상 변화, 피부 PH 값이 활용되었고, 성장에는 키, 몸무게, 체질량지수 (Body mass index, BMI), 골연령 (Bone age), Osteoporosis index, 체성분, 비만지수, Growth velocity가 평가도구로 활용되었다. 자폐스펙트럼장애에는 한국영유아발달검사, 아동기 자폐증 평정척도, 자폐아동 행동발달 평가도구가 활용되

었다. 소아 특발성 관절염에는 증상 변화, 혈액검사, 체온, 소아건강설문 (Childhood health assesment questionnaire, CHAQ), 관절가동범위, VAS가 활용되었다. 비만에는 체질량지수, 비만지수, 체중, 키, 체성분, 체지방 비율, Röhler index (RI)가 평가 목적으로 활용되었다 (Table 2).

6. 부작용 보고 여부

포함된 연구 중 한의치료에 의해 부작용이 보고된 예는 5건이었다. 자세한 부작용 증상 및 환자수는 Table 3에 기록하였다.

Table 2. Top-five Disease's Outcome Measure of Clinical Studies in the Journal of Pediatrics of Korean Medicine

Disease	Outcome measure	n (%)
Atopic dermatitis (n=192)	SCORAD (n=121)	63.0%
	Survey (pre-reported in paper) (n=71)	40.0%
	EASI (n=17)	8.9%
	Symptom change (n=7)	3.6%
	Skin PH value (n=6)	3.1%
Growth (n=504)	Height (n=504)	100%
	Weight (n=253)	50.2%
	BMI (n=136)	27.0%
	Bone age (n=118)	23.4%
	Osteoporosis index (n=67)	13.3%
	Body composition (n=51)	10.1%
	OI (n=51)	10.1%
	Growth velocity (n=18)	3.6%
	Autism (n=9)	K-ASQ (n=7)
K-CARS (n=2)		22.2%
E-CLAC (n=1)		11.1%
Juvenile idiopathic arthritis (n=3)	Symptom change (n=3)	100%
	Blood test (n=1)	33.3%
	Body temperature (n=1)	33.3%
	CHAQ (n=1)	33.3%
	ROM (n=1)	33.3%
	VAS (n=1)	33.3%
Obesity (n=60)	BMI (n=60)	100%
	OI (n=59)	98.3%
	Weight (n=40)	66.7%
	Height (n=39)	65%
	Body composition (n=20)	33.3%
	RI (n=20)	33.3%
	Fat percents (n=1)	1.7%

BMI: Body mass index; CHAQ: Childhood health assesment questionnaire; E-CLAC: EWHA-checklist for autistic children; EASI: Eczema area and severity index; K-ASQ: Korean ages & stages questionnaires; K-CARS: Korean-childhood autism rating scale; OI: Obesity index; RI: Röhler index; ROM: Range of motion; SCORAD: Scoring atopic dermatitis; VAS: Visual analog scale

Table 3. Characteristics of Published Clinical Studies in the Journal of Pediatrics of Korean Medicine

First author (year)	Study design	Age, number of patients	Patient's disease	Intervention	Outcome measure	Result	Adverse events
(1)Choi (2008)	Case studies	12Y, n=2	Fatty liver	<ol style="list-style-type: none"> Herbal medicine Acupuncture Therapeutic exercise Consultation 	<ol style="list-style-type: none"> GOT GPT GGT TG BMI Symptom change 	<ol style="list-style-type: none"> Improved Improved Improved Improved Improved Improved 	N
(2)Jeong (2008)	Case studies	10,30Y, n=18	Growth	<ol style="list-style-type: none"> Herbal medicine 	<ol style="list-style-type: none"> Height BMI Growth velocity 	<ol style="list-style-type: none"> Improved Improved Improved 	N
(3)Jung (2008)	Case studies	9Y, n=1	Mesenteric lymphadenitis	<ol style="list-style-type: none"> Herbal medicine Acupuncture Moxibustion 	<ol style="list-style-type: none"> Symptom change 	<ol style="list-style-type: none"> Improved 	N
(4)Kim (2008)	Case studies	18Y, n=1	Conversion disorder	<ol style="list-style-type: none"> Herbal medicine Acupuncture Moxibustion Consultation 	<ol style="list-style-type: none"> Symptom change 	<ol style="list-style-type: none"> Improved 	N
(5)Lee (2008)	Case studies	16M, n=1	Traumatic cerebral infarction	<ol style="list-style-type: none"> Herbal medicine Acupuncture Aromatherapy Rehabilitation Physical therapy 	<ol style="list-style-type: none"> Activity index 	<ol style="list-style-type: none"> Improved 	N
(6)Park (2008)	Case studies	15Y, n=1	Ramsay hunt syndrome	<ol style="list-style-type: none"> Herbal medicine Acupuncture Electroacupuncture Moxibustion Vesiculation therapy Massage Cupping boil Taping 	<ol style="list-style-type: none"> Yanagihara's scale H-B Scale 	<ol style="list-style-type: none"> Improved ND 	N
(7)Song (2008)	Case studies	8Y, n=1	Aphasia	<ol style="list-style-type: none"> Herbal medicine Acupuncture Verbal remediation Intelligence-learning treatment 	<ol style="list-style-type: none"> Symptom change PRES 	<ol style="list-style-type: none"> Improved Improved 	N
(8)Yu (2008)	Case studies	8M-9Y, n=9	Atopic dermatitis	<ol style="list-style-type: none"> Herbal medicine 	<ol style="list-style-type: none"> SCORAD 	<ol style="list-style-type: none"> Improved 	N

First author (year)	Study design	Age, number of patients	Patient's disease	Intervention	Outcome measure	Result	Adverse events
(9)Choi (2009)	Case studies	9Y, n=1	Sequelae intracranial hemorrhage	1. Herbal medicine 2. Acupuncture 3. Rehabilitation	1. ROM 2. MMT 3. Symptom change	1. Improved 2. Improved 3. Improved	N
(10)Hong (2009)	Case studies	7Y, n=1	Autism	1. Acupuncture	1. K-CARS 2. E-CLAC	1. Improved 2. Improved	N
(11)Jung (2009)	Case studies	4Y, n=1	Urolithiasis	1. Herbal medicine	1. Symptom change	1. Improved	N
(12)Kim (2009)	Case studies	12Y, n=1	Epilepsy	1. Herbal medicine 2. Acupuncture	1. Symptom change	1. Improved	N
(13)Kim (2009)	Case studies	6Y, n=1	Functional dyspepsia	1. Herbal medicine 2. Acupuncture	1. Symptom change	1. Improved	N
(14)Lee (2009)	Case studies	12-16Y, n=3	Psoriasis	1. Herbal medicine	1. PASI	1. Improved	N
(15)Sung (2009)	Case studies	2Y, n=1	Traumatic brain injury	1. Herbal medicine 2. Acupuncture 3. Moxibustion 4. Cupping therapy	1. Symptom change	1. Improved	N
(16)Yoo (2009)	Case studies	4Y, n=1	Juvenile rheumatoid arthritis	1. Herbal medicine	1. ESR 2. CRP 3. Symptom change	1. Improved 2. Improved 3. Improved	N
(17)Yoon (2009)	Case studies	24.29Y, n=19	Atopic dermatitis	1. Herbal medicine 2. Acupuncture 3. ILLT	1. SCORAD	1. P<0.05 2. P<0.05	N
(18)Yu (2009)	Case studies	6-14Y, n=121	Growth	1. Herbal medicine	1. Height	1. Unclear	N
(19)Cheon (2010)	Case studies	13Y, n=1	Abducence nerve paralysis	1. Herbal medicine 2. Acupuncture 3. Carbon-ray 4. Moxibustion 5. Aroma therapy 6. Infra-red	1. Symptom change	1. Improved	N
(20)Choi (2010)	Case studies	18Y, n=1	Post traumatic stress disorder	1. Herbal medicine 2. Acupuncture	1. Symptom change	1. Improved	N

First author (year)	Study design	Age, number of patients	Patient's disease	Intervention	Outcome measure	Result	Adverse events
(21)Gok (2010)	Case studies	6.44Y, n=27	n.r.	1. Herbal medicine	1. Symptom change	1. Improved	Urinary frequency and hives in 2 cases Y
(22)Hong (2010)	Case studies	13-14Y, n=2	Structural scoliosis	1. Chuna 2. Acupuncture	1. Cobb's angle 2. VAS	1. Improved 2. Improved	N
(23)Kim (2010)	Case studies	5-11Y, n=5	Nocturnal enuresis	1. Moxa bucket moxibustion (5 patients) 2. Herbal medicine (5 patients) 3. Acupuncture (5 patients) 4. Moxibustion (3 patients)	1. Symptom change 2. ICCS	1. Improved 2. Improved	N
(24)Park (2010)	Case studies	23Y, n=1	Atopic dermatitis	1. Herbal medicine 2. Acupuncture 3. Horminis placenta external therapy	1. Kunz type 2. SCORAD 3. Symptom change	1. Improved 2. Improved 3. Improved	N
(25)Ryu (2010)	Case studies	10Y, n=1	Acute appendicitis	1. Herbal medicine 2. Acupuncture	1. Symptom change 2. VAS 2. Abdominal ultrasonography	1. Improved 2. Improved 3. Improved	N
(26)Son (2010)	Case studies	1-10Y, n=2	Case 1. Epilepsy Case 2. n.r.	1. Herbal medicine (2 patients) 2. Acupuncture (2 patients) 3. Moxibustion (2 patients) 4. Cupping (1 patient) 5. Aromatherapy (1 patient) 6. Infra-red (1 patient)	1. Symptom change	1. Improved	N
(27)Yoo (2010)	Case studies	6Y, n=1	Juvenile idiopathic arthritis	1. Herbal medicine	1. CHAQ 2. VAS 3. ROM 4. Symptom change	1. Improved 2. Improved 3. Improved 4. Improved	N
(28)Yoo (2010)	Case studies	5Y, n=1	Juvenile idiopathic arthritis	1. Herbal medicine	1. Blood test 2. Body temperature 3. Symptom change	1. Improved 2. Improved 3. Improved	N
(29)Hong (2011)	Case studies	1-19Y, n=42	Allergic rhinitis	1. Intranasal acupuncture	1. TNSS 2. QLQKR	1. P<0.05 2. P<0.05	N
(30)Hong (2011)	Case studies	7Y, n=7	Hemophilic arthropathy	1. Herbal medicine 2. Acupuncture 3. Moxibustion 4. Cupping	1. ROM 2. IPI 3. WOMAC osteoarthritis index 4. VAS	1. Improved 2. Improved 3. Improved 4. Improved	N

First author (year)	Study design	Age, number of patients	Patient's disease	Intervention	Outcome measure	Result	Adverse events
(31)Jo (2011)	Case studies	7-15 (10.8)Y, n=30	n.r.	1. Hot spring therapy	1. Weight 2. BMI 3. Body composition 4. HRV	1. P<0.05 2. ND 3. P<0.05 4. ND	N
(32)Jung (2011)	Case studies	9Y, n=1	Obesity	1. Herbal medicine 2. Acupuncture 3. Moxibustion 4. Auricular acupuncture 5. Behavior modification	1. Weight 2. BMI 3. Fat percents	1. Improved 2. Improved 3. Improved	N
(33)Ko (2011)	Case studies	2-20Y, n=69	Allergic rhinitis	1. Herbal medicine 2. Acupuncture	1. TNSS	1. P<0.01	N
(34)Lee (2011)	Case studies	19-78 (52.64)M, n=56	n.r.	1. Acupoint sticking in Dog-days	1. Symptom change	1. Improved	Y Pruritus in 2 cases
(35)Lee (2011)	Case studies	3-16 (9.17)Y, n=67	Growth	1. Herbal medicine	1. Bone age 2. Osteoporosis index 3. Height 4. Weight 5. BMI	1. P<0.01 2. P<0.01 3. P<0.01 4. P<0.01 5. P<0.01	N
(36)Park (2011)	Case studies	5Y, n=1	Krabbe disease	1. Herbal medicine 2. Acupuncture	1. Symptom change	1. Improved	N
(37)Ryu (2011)	Case studies	2Y, n=1	Mycoplasma pneumonia	1. Herbal medicine 2. Aroma therapy	1. Symptom change	1. Improved	N
(38)Suk (2011)	Case studies	n.r., n=5	Constipation	1. Herbal medicine extract (1 patient) 2. Herbal medicine (1 patient) 3. Jungjagyobup (2 patients)	1. Symptom change	Case1-3,5 1. Improved Case4 1. ND	N
(39)Sung (2011)	Case studies	10Y, n=1	Femoral Shaft fracture	1. Herbal medicine 2. Herbal medicine extract	1. X-ray	1. Improved	N
(40)Yu (2011)	Case studies	13M-3Y, n=2	Developmental disorder	1. Herbal medicine	1. GMFM 2. PEDFI	1. Improved 2. Improved	N
(41)Hong (2012)	Case studies	3-15 (10.01)Y, n=112	Growth	1. Herbal medicine	1. Height	1. P<0.01	N
(42)Hwangbo (2012)	Case studies	5Y, n=1	Alopecia areata	1. Herbal medicine	1. Symptom change	1. Improved	N

First author (year)	Study design	Age, number of patients	Patient's disease	Intervention	Outcome measure	Result	Adverse events
(43)Jo (2012)	Case studies	0-15Y, n=121	Traffic accident child patient	1. Herbal medicine (96 patients) 2. Acupuncture (114 patients) 3. Physical therapy (55 patients) 4. Moxibustion (12 patients)	1. Symptom change	1. Improved	N
(44)Kim (2012)	Case studies	2-5Y, n=60	Underweight	1. Herbal medicine	1. BMI	1. P<0.05	N
(45)Ko (2012)	Case studies	n.r., n=71	Atopic dermatitis	1. Herbal medicine	1. Survey(pre-reported in paper)	1. P<0.05	N
(46)Lee (2012)	Case studies	7Y, n=1	Allergic purpura	1. Herbal medicine 2. Acupuncture 3. Pediluvium	1. Symptom change	1. Improved	N
(47)Lee (2012)	CCT	79.54M, n=26	Anorexia	1. Herbal medicine	1. K-CEBQ	1. P<0.05	N
(48)Min (2012)	Case studies	8Y, n=1	Psoriasis	1. Herbal medicine 2. External treatment	1. Symptom change 2. PASI	1. Improved 2. Improved	N
(49)Park (2012)	Case studies	2-7Y, n=7	Chronic epistaxis	1. Herbal medicine	1. Symptom change	1. Improved	N
(50)Park (2012)	Case studies	16Y, n=1	Cervical radiculopathy	1. Herbal medicine 2. Acupuncture 3. Pharmacopuncture 4. Physical therapy	1. VAS 2. ROM	1. Improved 2. Improved	N
(51)Suk (2012)	Case studies	10-15Y, n=6	Osgood-Schlatter disease	1. Extravascular laser system (6 patients) 2. Herbal medicine (4 patients) 3. Blood-pricking (2 patients)	1. Symptom change	1. Improved	N
(52)Ju (2013)	Case studies	13Y, n=1	Unidentified alopecia + Alopecia areata	1. Herbal medicine 2. Acupuncture 3. Microneedle therapy system 4. Meridian pharmacopuncture therapy 5. Physiotherapy 6. Cupping 7. External therapy	1. Symptom change	1. Improved	N
(53)Kang (2013)	Case studies	10.9Y, n=20	Obesity	1. Balneotherapy	1. BMI 2. RI 3. OI 4. Body composition	1. P<0.05 2. P<0.05 3. P<0.05 4. P<0.05	N

First author (year)	Study design	Age, number of patients	Patient's disease	Intervention	Outcome measure	Result	Adverse events
(54)Kim (2013)	Case studies	5-9Y, n=2	n.r.	1. Herbal medicine (2 patients) 2. Moxibustion (1 patient) 3. Cupping (1 patient) 4. Aroma spray (1 patient) 5. Nasal laser (1 patient)	1. Symptom change	1. Improved	N
(55)Ko (2013)	Case studies	3-13 (5.19)Y, n=135	Growth	1. Herbal medicine	1. Height 2. Weight	1. P<0.05 2. P<0.05	N
(56)Lee (2013)	Case studies	21M-10Y, n=5	Peripheral facial palsy	1. Herbal medicine 2. Acupuncture 3. Electro-acupuncture 4. Infra-red	1. H-B Scale	1. Improved	N
(57)Lim (2013)	Case studies	4-11Y, n=39	Obesity	1. Herbal medicine	1. BMI 2. OI 3. Height 4. Weight	1. P<0.05 2. P<0.05 3. P<0.05 4. P<0.05	Y Gastrointestinal disorder in 2 cases, nausea in 2 cases, insomnia in 1 case
(58)Park (2013)	Case studies	11Y, n=1	Hypohidrosis	1. Herbal medicine	1. Symptom change	1. Improved	N
(59)Ryu (2013)	Case studies	14Y, n=1	Essential tremor	1. Herbal medicine 2. Acupuncture	1. Symptom change	1. Improved	N
(60)Yoo (2013)	Case studies	1Y, n=1	Juvenile idiopathic arthritis	1. Herbal medicine	1. Symptom change	1. Improved	N
(61)Han (2014)	Case studies	11M, n=1	n.r.	1. Herbal medicine	1. Symptom change	1. Improved	Y Increase of ALT and AST (not reported number of patients)
(62)Jeong (2014)	Case studies	1Y, n=1	Neonatal brachial plexus palsy	1. Acupuncture 2. Intradermal acupuncture	1. EMG 2. AMS 3. NIPS 4. Grasping power	1. Improved 2. Improved 3. ND 4. Improved	Y No occurrence of adverse events
(63)Kang (2014)	Case studies	8M-8Y, n=3	n.r.	1. Herbal medicine	1. Symptom change	1. Improved	N

First author (year)	Study design	Age, number of patients	Patient's disease	Intervention	Outcome measure	Result	Adverse events
(64)Kang (2014)	Case studies	11.8Y, n=284	Peripheral facial palsy	<ol style="list-style-type: none"> 1. Acupuncture (282 patients) 2. Herbal medicine (240 patients) 3. Physical therapy (205 patients) 4. Moxibustion (92 patients) 5. Pharmacopuncture (27 patients) 6. Electro-acupuncture (193 patients) 7. Embedding therapy (3 patients) 8. Cupping therapy (121 patients) 9. Silver spike point therapy (205 patients) 10. Carbon (184 patients) 11. Hot pack (121 patients) 12. Infra-red (248 patients) 13. Facial massage (102 patients) 	n.r.	n.r.	N
(65)Kang (2014)	Case studies	5-12 (8.45)Y, n=20	Transient tic disorder	<ol style="list-style-type: none"> 1. Herbal medicine 	1. YGTSS	1. P<0.05	N
(66)Kim (2014)	Case studies	4Y, n=2	Allergic purpura	<ol style="list-style-type: none"> 1. Herbal medicine 2. Chinsband 	1. Symptom change	1. Improved	N
(67)Lim (2014)	Case studies	7Y, n=1	Precocious puberty	<ol style="list-style-type: none"> 1. Herbal medicine 	<ol style="list-style-type: none"> 1. Luteinizing hormone 2. Follicular stimulating hormone 3. Estradiol 	<ol style="list-style-type: none"> 1. Improved 2. Improved 3. Improved 	N
(68)Min (2014)	Case studies	0-5 (2.28)Y, n=69	Atopic dermatitis	<ol style="list-style-type: none"> 1. Herbal medicine 	1. SCORAD	1. Improved	N
(69)Shin (2014)	Case studies	11-15Y, n=6	Atopic dermatitis	<ol style="list-style-type: none"> 1. Herbal medicine 2. Acupuncture 3. External wet therapy 4. Lotion 5. Art therapy 6. Relaxation therapy 7. Lifestyle education 8. Food education 9. Wind bathing 10. Counseling 	<ol style="list-style-type: none"> 1. SCORAD 2. Skin PH value 3. Symptom change 	<ol style="list-style-type: none"> 1. Improved 2. ND 3. Improved 	N
(70)Sung (2014)	Case studies	9 (5-13)Y, n=17	Atopic dermatitis	<ol style="list-style-type: none"> 1. Atopy care program (Residence location, House status, Meal menu, School activity, Counselling, Herbal medicine, Herb tea, Herb bath, Herbal ointment, Herbal lotion, Photo therapeutic, Moxibustion, Acupuncture) 	<ol style="list-style-type: none"> 1. EASI 2. SCORAD 	<ol style="list-style-type: none"> 1. P<0.05 2. ND 	N

First author (year)	Study design	Age, number of patients	Patient's disease	Intervention	Outcome measure	Result	Adverse events
(71)Yu (2014)	Case studies	7M, n=1	Brachial plexus palsy	1. Acupuncture 2. Vojta therapy 3. Occupational therapy	1. Symptom change	1. Improved	N
(72)Kang (2015)	Case studies	0-8Y, n=55	Infantile crying after traffic accident	1. Herbal medicine (35 patients) 2. Acupuncture (15 patients)	n.r.	n.r.	N
(73)Kim (2015)	Case studies	6Y, n=1	Hydrocele	1. Herbal medicine	1. Symptom change	1. Improved	N
(74)Lee (2015)	Case studies	2-5M, n=7	Autism	1. Herbal medicine	1. K-ASQ	1. Improved	N
(75)Im (2016)	Case studies	8M, n=1	Burn	1. Herbal medicine extract 2. Acupuncture 3. External treatment	1. Symptom change	1. Improved	N
(76)Jeon (2016)	Case studies	13Y, n=1	Helicobacter pylori-related iron deficiency anemia	1. Herbal medicine	1. Symptom change	1. Improved	N
(77)Jeon (2016)	Case studies	7.6-9Y, n=2	Nocturnal enuresis	1. Herbal medicine	1. Symptom change	1. Improved	N
(78)Kim (2016)	Case studies	5-16 (9.82Y, n=51)	Growth	1. Herbal medicine	1. Bone age 2. Osteoporosis index 3. Height 4. Weight 5. BMI 6. Body composition	1. P<0.05 2. P<0.05 3. P<0.05 4. P<0.05 5. P<0.05 6. P<0.05	N
(79)Koo (2016)	Case studies	0-13Y, n=24	Neck pain + Cervical sprain	1. Herbal medicine (24 patients) 2. Acupuncture (24 patients) 3. Chuna (24 patients) 4. Cupping (20 patients) 5. Physical therapy (17 patients)	1. Symptom change	1. Improved	N
(80)Lee (2016)	Case studies	5Y, n=1	Tic disorder + Allergic rhinitis	1. Herbal medicine 2. Laser acupuncture 3. Aroma therapy	1. Symptom change	1. Improved	N
(81)Lee (2016)	Case studies	7M, n=1	n.r.	1. Herbal medicine 2. Acupuncture 3. Moxibustion 4. Chuna 5. Cupping	1. Symptom change	1. Improved	N

First author (year)	Study design	Age, number of patients	Patient's disease	Intervention	Outcome measure	Result	Adverse events
(82)Lee (2016)	Case studies	2Y, n=1	Adenoidal hypertrophy	1. Herbal medicine	1. Symptom change 2. OSA-I8 3. A/N ratio	1. Improved 2. Improved 3. Improved	N
(83)Jeon (2017)	Case studies	12-47Y, n=2	Olfactory disorder	1. Herbal medicine 2. Acupuncture 3. Nasal laser 4. Infra-red	1. Symptom change	1. Improved	N
(84)Lee (2017)	Case studies	7Y, n=1	Hematuria	1. Herbal medicine	1. Symptom change 2. Urinalysis	1. Improved 2. Improved	N
(85)Lee (2017)	Case studies	8Y, n=2	Precocious puberty	1. Herbal medicine	1. Height 2. Weight 3. Body composition 4. Sex hormone test	1. Improved 2. Improved 3. Improved 4. Improved	N
(86)Shin (2017)	Case studies	8Y, n=1	Autism	1. Herbal medicine extract 2. Acupuncture 3. Electric moxibustion	1. K-CARS	1. Improved	N
(87)Yun (2017)	Case studies	11-19M, n=3	Cerebral palsy	1. Herbal medicine (2 patients) 2. Acupuncture (3 patients) 3. Rehabilitation (3 patients)	1. Height 2. Weight 3. GMFCS 4. GMFM66 5. PEDI 6. Functional development	1. Improved 2. Improved 3. Improved 4. Improved 5. Improved 6. Improved	N

A/N: The adenoid to nasopharyngeal; ALT: Alanine aminotransferase; AMS: Active movement scale; AST: Aspartate aminotransferase; BMI: Body mass index; CHAQ: Childhood health assessment questionnaire; CRP: C-reactive protein; E-CLAC: EWHA-checklist for autistic children; EASI: Eczema area and severity index; EMG: Electromyographic test; ESR: Erythrocyte sedimentation rate; GGT: Gamma(G)-glutamyl transferase; GMFCS: Gross motor function classification system; GMFEM: Gross motor function measure; GOT: Glutamic oxalacetic transaminase; GPT: Glutamic pyruvate transaminase; H-B Scale: House-Brackmann Grading system; HRV: Heart rate variability; ICCS: International children's continence society; K-ASQ: Korean Ages & Stages Questionnaires; K-CARS: Korean childhood autism rating scale; K-CEBQ: Korean children's eating behaviour questionnaire; LFI: Lequesne's functional index; LLLT: Low level laser therapy; MMT: Manual muscle test; n.r.: Not reported adverse events; NIPS: Neonatal infant pain scale; Oi: Obesity index; OSA: Obstructive sleep apnea; PASI: Psoriasis area and severity index; PEDI: Pediatric evaluation of disability inventory; PRES: Preschool receptive-expressive language scale; QLQKR: Quality of life questionnaire for Korean rhinitis; RI: Röhler index; ROM: Range of motion; SCORAD: Scoring atopic dermatitis; TG: Triglycerides; TNSS: Total nasal symptom score; VAS: Visual analog scale; WOMAC: Western Ontario and McMaster university; Y: Reported adverse event; YGTSS: Yale global tic severity scale

IV. Discussion

의학이 날로 발전함에 따라 의사의 임상적 전문성과 관련한 의사결정 능력은 더 강조되고 있으며, 근거 중심의학이란 환자 개개인에 대한 진료에서 의학적 결정을 내려야 할 때 의사의 개인적인 전문 임상경험을 체계적인 연구에서 수집된 가장 최신의 외부 임상근거와 통합시키는 과정이다^{12,13}. 임상 의사는 환자 개개인에 대한 최신의 연구정보를 수집하고 평가하고 이를 임상적 경험에 비추어 환자를 진단하고 치료할 수 있어야 하는 것이다.

저자들은 소아의 한방치료와 관련된 임상연구 동향을 파악하고자 한방소아과학회지에 게재된 임상연구 중 질병에 대해 한의치료가 이루어진 연구논문을 조사하였다. 대한한방소아과학회지는 1986년부터 2018년 현재까지 대한한방소아과학회의 주관으로 발간되며 현재는 연 4회 출판되고 있다. 대한한방소아과학회지 홈페이지의 논문검색을 통해 2008년부터 2017년까지 최근 10년간의 연구논문 총 335편을 대상으로 하여 분석하였다. 대상 논문 중 문헌연구, 설문연구, 실험연구를 제외한 임상연구 150편 중 한의치료를 중재로 사용한 87편을 최종 선정하여 분석하였다.

최종 대상 논문 87편 중 증례연구가 86편으로 대부분이었고, 이 중 42편이 단일증례연구로, 아직까지 대조군연구는 많이 이뤄지지 않고 있었다. 다음으로 연구 대상 질환을 다빈도 순으로 분석한 결과, 다빈도 질환은 아토피성 피부염, 성장, 자폐스펙트럼장애, 소아 특발성 관절염, 비만 순으로 나타났다 (Table 1). 아토피 피부염의 경우, 해마다 유병률은 증가하는 추세이며¹⁴, 피부질환에 대한 양약의 부작용에 대한 인식에 따라 한의치료에 대한 관심이 높아지면서¹⁵ 그에 대한 임상 연구도 많았던 것으로 사료된다. 소아의 성장은 체격과 체력에 대한 관심뿐 아니라 외모에 대한 높은 관심도로 인해 한방소아과를 찾아오는 주요한 주소증 중 하나이며, 한의치료의 성장 촉진에 대한 효과를 입증하기 위한 연구 또한¹⁶ 증가하고 있는 것으로 생각된다.

중재방법에 대한 분석을 통해, 대상 논문 중 다빈도 상위 5개 질환의 중재방법으로 가장 많이 활용된 치료법은 한약이었다. 한방병원 비급여 진료 항목의 90%, 한의원 비급여 진료 항목의 97.1%를 차지할 정도로 한의의료기관의 비급여 진료 비중 중에서 침약치료의 빈도가 가장 높은 것으로 보고된 바 있으며¹⁷, 이는 한방

소아과 진료에 있어서도 동일하게 적용된다. 한의치료의 대표적인 치료로써 환아와 보호자의 한약치료에 대한 적극적인 요구도와 기대치를 반영한 것으로 생각된다¹⁸. 2017년 이루어진 한방 의료이용 및 한약소비실태조사에 따르면, 한방 의료이용자들은 한방 의료를 이용하는데 드는 비용을 비싸다고 생각하고 있었으며, 비싸다고 생각하는 치료법으로는 84.1%가 한약을 선택하였다. 또 한방 의료에 대한 건강보험급여 확대 시 우선적용이 필요한 한방치료법으로 탕약을 선택한 경우가 가장 많았고, 가구소득이 낮은 경우에 그 비율이 더 높은 것으로 조사되었다¹⁹. 이러한 점들을 고려하여 한방소아과에서도 치료 목적의 한약치료에 대해서는 건강보험의 보장성이 확대되어야 할 필요성이 있다고 하겠다.

대상 논문 중 다빈도 상위 5개 질환의 대상자 평가 방법에 있어, 총 87편의 논문 중 36편의 논문은 평가도구 없이 환자의 주관적인 증상의 변화만으로 효과를 평가하였다. 이는 환자의 주관적인 증상의 개선과 삶의 질 개선이 한의학적 치료 평가에 있어서 중요하기 때문일 것으로 생각되나 증상과 삶의 질 평가에 대한 객관적인 평가도구가 필요하며 향후 연구 수행 시 뒷받침되어야 할 부분으로 사료된다.

대상 논문 중 부작용이 보고된 논문은 총 5편으로 그 빈도가 낮았으나, 부작용이 일어나게 된 인과관계의 파악과 심각성에 대해 심층적인 분석이 필요하다고 생각된다.

이처럼 한방소아과학회지에 게재된 임상연구 논문의 대부분은 단순증례인 경우가 많았으며 대상자의 숫자도 적은 수인 경우가 많았고, 계획된 상태에서 진행되는 전향적 연구보다는 임상에서 유의한 결과를 얻은 후에 후향적으로 보고하는 연구가 많아 연구방법 자체에 bias가 있을 수 있는 한계점이 있다고 하겠다. 한방소아과는 연구대상의 특성상 연구윤리적으로 소아를 대상으로 무작위 배정 대조군 연구 등을 시행하기 어려운 점이 있으나, 향후 이러한 한계점을 극복하고 다양한 연구가 이뤄진다면 그 결과는 한방소아과 임상진료에 근거로써 활용될 수 있을 것이다.

본 연구는 임상연구 논문을 수집, 분석한 문헌연구로, IRB 신청·승인의 과정을 거치지지는 못하였다. 또한 한방소아과학회지에 국한하여 연구를 진행했기 때문에 국내·외 소아의 한방치료에 대한 임상연구를 모두 포괄하지 못했다는 측면에서 한계점이 있다.

하지만, 소아과 질환에 관한 최근의 연구 동향을 알

아볼 수 있었고, 보건의료계에서는 근거를 기반으로 임상적 판단을 뒷받침하고자 하고자 하는 근거중심의 학이 발전하고 있으며, 한의학도 예외는 아니므로 향후 무작위 대조군 연구나 대단위 관찰연구를 중심으로 높은 수준의 근거를 마련할 수 있도록 후속연구들이 이뤄지도록 할 필요성을 재고할 수 있는 연구라 할 수 있다.

V. Conclusion

한방소아과학회지에 10년간 게재된 임상연구 논문을 분석하여 다음과 같은 결과를 얻었다. 지난 10년간 한방소아과학회지에 게재된 임상연구는 87편이었으며, 그 중 86편은 증례연구 (98.9%), 1편은 대조군연구 (1.1%)였다. 단일 증례를 보고한 경우가 가장 많았고, 72.4%에서 10건 이하의 증례를 보고한 논문이었다. 임상연구 중 같은 질환을 다룬 상위 5가지는 아토피성 피부염, 성장, 자폐스펙트럼장애, 소아 특발성 관절염, 비만이었으며, 가장 많이 활용된 중재는 한약이었다. 향후 양질의 근거를 확보하기 위한 무작위 대조군 연구와 대단위의 관찰연구를 중심으로 한 연구가 필요하다고 사료된다.

References

- Cheung F. TCM: made in China. *Nature*. 2011;480(7378):S82-3.
- Yun KJ, Kim DS. 'Medical Unification Plan' for shared growth with modern medicine and traditional medicine in Korea. Korea Institute for Health and Social Affairs: Sejong. 2013.
- Hong SH. Clinical research: present and future. *J Korean Med Assoc*. 2010;53(9):744.
- Masic I, Miokovic M, Muhamedagic B. Evidence based medicine: new approaches and challenges. *Acta Inform Med*. 2008;16(4):219-25.
- Guideline Center for Korean Medicine [Internet]. Available from: http://gkom2016.cafe24.com/html_2016/
- Kim KB, Kim DG, Kim YH, Kim JH, Min SY, Park EJ, Baek JH, Yu SA, Lee SY, Lee JY, Lee HJ, Chang GT, Chai JW, Han YJ, Han JK. *Hanbangsoacheongsongnyeonuihak*. Seoul: Ui Sung Dang Publishing Co. 2010:27.
- Lee SD, Kim MD. Study on the significance and importance of preclinic phase theory (=milbyung) in oriental medicine. *J Soc Prev Korean Med*. 1997;1(1):105-17.
- Cho US, Baek JH. A review of Korean medicine treatment for tic disorder. *J Pediatr Korean Med*. 2017;31(4):9-18.
- Kim QY, Lee JY. Research trends of the traditional Korean medicine treatment for atopic dermatitis: based on the journal of pediatrics of Korean medicine. *J Pediatr Korean Med*. 2017;31(1):25-42.
- Kim KR, Han JK, Kim YH. Review of Korean clinical studies on treatment for childhood obesity. *J Pediatr Korean Med*. 2016;30(3):108-20.
- Seo YM, Chang GT, Kim JH. Analysis of articles published in the journal of Korean oriental pediatrics. *J Pediatr Korean Med*. 2004;18(1):247-72.
- Kim S. Application model of medical education in evidence-based medicine. *Korean Med Educ Rev*. 2001;3(1):27-36.
- Bensing J. Bridging the gap. The separate worlds of evidence-based medicine and patient-centered medicine. *Patient Educ Couns*. 2000;39(1):17-25.
- Yun YH, Choi IN. A study on the development of traditional Korean medicine clinical practice guideline for atopic dermatitis. *J Korean Orient Med Ophthalmol Otolaryngol Dermatol*. 2012;25(2):38-48.
- Seo MS, Kim KH. The study on atopic dermatitis papers published in the journal of Korean oriental ophthalmology & otolaryngology & dermatology. *J Korean Orient Med Ophthalmol Otolaryngol Dermatol*. 2009;22(3):108-21.
- Yoon HJ, Kim DG, Lee JY. A study for the parent's recognition of the oriental medical treatment and the expectation of children's growth. *J Korean Orient Pediatr*. 2011;25(1):119-27.
- Park JK, Kim KH. A survey on uncovered services in national health insurance of traditional Korean medicine institution. *J Soc Prev Korean Med*. 2017;21(3):43-50.
- You HJ, Lee JY, Kim DG. A survey on parent's recognition and retrospective study on effect of herbal medication. *J Korean Orient Pediatr*. 2005;19(2):243-53.

19. NIKOM. Report on usage of Korean medicine. Ministry of Health and Welfare. 2017.
20. Choi KH, Kim HY, Song IS. Two cases reports of child fatty liver with obesity. J Pediatr Korean Med. 2008;22(3):95-103.
21. Jeong MJ, Gok SY, Lee SY. Pilot study of effect to the growth after the administration of herbal medicine to the prepuberty children. J Pediatr Korean Med. 2008; 22(3):25-34.
22. Jung JH, Oh JE, Lee HJ, Park EJ. A case report of mesenteric lymphadenitis with diarrhea. J Pediatr Korean Med. 2008;22(3):75-82.
23. Kim HY, Choi KH, Song IS. A clinical report of conversion disorder. J Pediatr Korean Med. 2008;22(3): 17-24.
24. Lee NY, Han JK, Kim YH. A case report of traumatic cerebral infarction. J Pediatr Korean Med. 2008;22(1): 59-67.
25. Park ES, Lee JY. A case of Ramsay Hunt syndrome with sinusitis. J Pediatr Korean Med. 2008;22(2):1-18.
26. Song HJ, Han HK, Kim YH. A case report of child aphasia. J Pediatr Korean Med. 2008;22(2):115-23.
27. Yu HY, Kim KB, Min SY, Kim JH. Case study of the effects of Saenghyeoryunbueum on atopic dermatitis. J Pediatr Korean Med. 2008;22(1):35-48.
28. Choi KH, Hong SJ, Song IS. A case report of a sequela of intracranial hemorrhage in childhood. J Pediatr Korean Med. 2009;23(3):155-63.
29. Hong SJ, Choi KH, Song IS. A clinical report of scalp acupuncture effects on autistic children. J Pediatr Korean Med. 2009;23(3):133-42.
30. Jung JH, Kim MK, Oh JE, Ahn JS, Eun SH. A case report of a child who has urolithiasis with urinary tract infections. J Pediatr Korean Med. 2009;23(3):1-8.
31. Kim YY, Min SY, Kim JH. A case report of symptomatic epilepsy. J Pediatr Korean Med. 2009;23(1):85-93.
32. Kim CY, Chang GT. A case report of functional dyspepsia with abdominal distention. J Pediatr Korean Med. 2009;23(3):121-31.
33. Lee KH, Chang GT. Three cases report of children psoriasis treated by Bangpungtongsungsan. J Pediatr Korean Med. 2009;23(3):207-16.
34. Sung HK, Min SY, Kim JH. A case report of primary developmental disorder induced by traumatic brain injury. J Pediatr Korean Med. 2009;23(3):89-108.
35. Yoo CK, Lee YJ. A case report of systemic type juvenile rheumatoid arthritis with fever and eruption. J Pediatr Korean Med. 2009;23(1):73-83.
36. Yoon HJ, Yoon JS, Kim DG, Lee JY. The effects of low level laser therapy on decrease of atopic dermatitis symptoms. J Pediatr Korean Med. 2009;23(3):193-206.
37. Yu HY, Kim KB, Min SH, Kim JH. Effects to the growth after administration of Seongjangbojunggeonatang. J Pediatr Korean Med. 2009;23(2):103-15.
38. Cheon JH, Min SY, Kim JH. One clinical study on strabismus patient of abducence nerve paralysis with oriental medicine. J Pediatr Korean Med. 2010;24(3): 26-32.
39. Choi KH, Hong SJ, Song IS. A clinical report of post traumatic stress disorder from sexual violence. J Pediatr Korean Med. 2010;24(3):76-80.
40. Gok SY, Jung SK, Lyu SA, Lee SY. Effects of the Gagam-bopyeonyangyeongjeon on the lung weakness children. J Pediatr Korean Med. 2010;24(2):88-98.
41. Hong SJ, Choi KH, Song IS, Lee CH. A clinical trial for two adolescent patients with structural spinal scoliosis. J Pediatr Korean Med. 2010;24(3):50-7.
42. Kim JY, Lim HW, Kim JH, Kwon K, Kim JH. The five cases report about enuretic children with moxa bucket moxibustion on Gwanwon (CV4). J Pediatr Korean Med. 2010;24(2):159-68.
43. Park ES, Lee JY. One case of atopic dermatitis treated by *Hominnis placentis* external wet therapy. J Pediatr Korean Med. 2010;24(1):46-56.
44. Ryu SH, Kim OY, Chae JW. A case report of patient with acute appendicitis diagnosed by abdominal ultrasonography. J Pediatr Korean Med. 2010;24(3): 43-9.
45. Son MJ, Han JK, Kim YH. Two cases report of epileptic children diagnosed as Sik-gan. J Pediatr Korean Med. 2010;24(2):22-30.
46. Yoo CK, Lee YJ. A case report of polyarticular type juvenile idiopathic arthritis (JIA) patient ineffective response to DMARDs and NSAIDs. J Pediatr Korean Med. 2010;24(1):57-64.
47. Yoo CK, Lee YJ. A case report of systemic type juvenile

- idiopathic arthritis with night fever. *J Pediatr Korean Med.* 2010;24(3):68-75.
48. Hong SJ, Choi GH, Song IS. A clinical study on the effect of intranasal acupuncture treatment on pediatric allergic rhinitis. *J Pediatr Korean Med.* 2011;25(2):15-26.
 49. Hong HS, Lee JY. A case report of a 7-year-old hemophilic arthropathy patient treated by oriental medical treatment. *J Pediatr Korean Med.* 2011;25(2):27-38.
 50. Jo MS, Lee NH, Han JK. The effect of balneotherapy on children autonomic nervous system function and body composition. *J Pediatr Korean Med.* 2011;25(3):77-84.
 51. Jung SK, Yu SA, Lee SY. A case report about obese child. *J Pediatr Korean Med.* 2011;25(2):94-101.
 52. Ko MJ, Lee YJ, Baek JH. A clinical study on the effect of traditional Korean treatment on pediatric rhinitis. *J Pediatr Korean Med.* 2011;25(3):12-26.
 53. Lee SH, Kim CY, Chang GT. Pilot research about influential factors and efficacy judgement of acupoint sticking in dog-days. *J Pediatr Korean Med.* 2011;25(1):72-81.
 54. Lee YJ, Baek JH, Ko MJ, Seo JM. Herbal medicine promotes growth of children. *J Pediatr Korean Med.* 2011;25(1):49-62.
 55. Park SK, Kim CY, Chang GT. A case report on Krabbe disease patient with oriental medicine. *J Pediatr Korean Med.* 2011;25(2):1-7.
 56. Ryu SH, Kim OY, Park GH, Choi SW, Chae JW. A case report of a child with mycoplasma pneumonia. *J Pediatr Korean Med.* 2011;25(2):88-93.
 57. Suk YH, Min SY, Kim JH. A clinical study on the effects of Jungjangyobup on 5 constipation children. *J Pediatr Korean Med.* 2011;25(3):27-34.
 58. Sung HK, Kim JH, Min SY. A case report of delayed healing in femoral shaft fractured child. *J Pediatr Korean Med.* 2011;25(1):63-71.
 59. Yu SA. Two cases of patients with developmental disorder treated by herbal medicine alone. *J Pediatr Korean Med.* 2011;25(2):39-54.
 60. Hong HS, Lee JY, Kim DG. Analysis of factors enhancing growth effect of Boyangsungjang-tang. *J Pediatr Korean Med.* 2012;26(2):62-71.
 61. Hwangbo M, Jeong MJ, Seo HS. A case report of child with alopecia areata. *J Pediatr Korean Med.* 2012;26(2):47-52.
 62. Jo MS, Han JK, Kim YH. The clinical study on 121 traffic accident child patients. *J Pediatr Korean Med.* 2012;26(2):35-46.
 63. Kim KJ, Lee JS, Yoon JH, Ryu BH, Paik HY. The weight gain effects of the Bofesungjangjeungbo-tang (Bǔfēichéngzhǎngzēngbǔ-tang) on under-weight Korean preschool children with frequent common cold or chronic rhinitis - Analysis of medical records -. *J Pediatr Korean Med.* 2012;26(4):44-50.
 64. Ko MJ, Baek JH. A clinical study on the effect of Hwangryunhaedock-tang on atopic dermatitis. *J Pediatr Korean Med.* 2012;26(4):51-60.
 65. Lee JH, Yu SA, Lee SY. A case report of allergic purpura. *J Pediatr Korean Med.* 2012;26(3):12-9.
 66. Lee SH, Kim CY, Chang GT. Assessment of herbal treatment in appetite improvement of anorexia children using Korean children's eating behaviour questionnaire (K-CEBQ). *J Pediatr Korean Med.* 2012;26(1):60-9.
 67. Min DL, Chang SJ, Park EJ. A case report of treating childhood psoriasis by Danguieumja-gagambang and external treatments. *J Pediatr Korean Med.* 2012;26(3):20-9.
 68. Park SK, Kim CY, Chang GT. Report for seven cases on patients with chronic epistaxis treated by Aguajinuktang-gamibang. *J Pediatr Korean Med.* 2012;26(3):55-63.
 69. Park JM, Yu SH, Chae JW. A case report of cervical radiculopathy. *J Pediatr Korean Med.* 2012;26(4):71-6.
 70. Suk YH, Min SY, Kim JH. A clinical study on the effects of extravascular laser system on osgood-schlatter disease. *J Pediatr Korean Med.* 2012;26(4):77-83.
 71. Ju BH, Choi YK, Yu SA, Lee SY. A case report on child with different types of alopecia. *J Pediatr Korean Med.* 2013;27(3):53-64.
 72. Kang KY, Ahn TW, Han JK. The effect of balneotherapy on obesity index and body composition on obese children. *J Pediatr Korean Med.* 2013;27(3):29-40.
 73. Kim EJ, Min SY, Kim JH. A case report regarding a treatment includes lots of different version of Samchulkunbi-tang to two pediatric patients diagnosed as sik-gan. *J Pediatr Korean Med.* 2013;27(4):1-9.
 74. Ko MJ, Baek JH, Kim SY. The effect of herbal medicine to treat digestive system problem on the children's

- growth. *J Pediatr Korean Med.* 2013;27(4):50-6.
75. Lee JH, Yu SA, Lee SY. Five case reports on peripheral facial palsy in children. *J Pediatr Korean Med.* 2013; 27(3):20-8.
 76. Lim YK, Min SR, Kim HM, Hur KW, Lee H, Lee JS, Kim HC, Park JW, Park HJ. Comparisons of effects of Biman-tang according to administration period in childhood obesity. *J Pediatr Korean Med.* 2013;27(4): 57-67.
 77. Park JM, Choi SW, Chae JW. A case report of hands and feet hyperhidrosis. *J Pediatr Korean Med.* 2013; 27(4):68-76.
 78. Ryu SH, Chae JW. A case report of early onset - essential tremor. *J Pediatr Korean Med.* 2013;27(1):1-6.
 79. Yoo CK, Lee YJ. A case report of oligoarticular juvenile idiopathic arthritis with oriental medication and DMARDs & NSAIDs tapering. *J Pediatr Korean Med.* 2013;27(4):31-8.
 80. Han JH, Kim DG, Lee JY. A case report: The measurement results of Duchenne muscular dystrophy patient using Sensitiv imagoTM and Ryodoraku. *J Pediatr Korean Med.* 2014;28(3):74-84.
 81. Jeong AR, Kim Kb, Cheon JH. A case report of neonatal brachial plexus palsy. *J Pediatr Korean Med.* 2014; 28(1):14-23.
 82. Kang KH, Park EJ. A case report of epileptic children diagnosed as simple partial seizures, infantile spasms and absence seizures. *J Pediatr Korean Med.* 2014;28(1): 61-70.
 83. Kang KY, Lee HL, Han JK, Kim YH. A clinical study on children and adolescents who visited the hospital of Korean medicine for 284-peripheral facial palsy. *J Pediatr Korean Med.* 2014;28(4):45-63.
 84. Kang KH, Park EJ. A case report of tic disorder children treated by Kuibiondam-tang gami. *J Pediatr Korean Med.* 2014;28(4):118-24.
 85. Kim BNR, Park JM, Chae JW. A case report of allergic purpura. *J Pediatr Korean Med.* 2014;28(4):108-17.
 86. Lim YK, Hur KW, Park SY, Suh KS, Chun SY, Lee SJ, Lee H, Kim HC. A case report of precocious puberty in a female patient: Significant improvement in controlling the sex hormone levels. *J Pediatr Korean Med.* 2014;28(4):64-70.
 87. Min DL, Han MH, Park G, Seo S, Han SR. Retrospective study about the effectiveness of a Korean medicine treatment on 69 infant and young child atopic dermatitis patients. *J Pediatr Korean Med.* 2014;28(3):17-30.
 88. Shin MR, Oh JA, Lee DN. 6 cases of atopic dermatitis children patients for hospitalization program. *J Pediatr Korean Med.* 2014;28(2):40-55.
 89. Sung HK, Seo KS, Son CG. A observational study on children with atopic dermatitis in atopic-free village. *J Pediatr Korean Med.* 2014;28(1):1-6.
 90. Yu SA. A case report of child with brachial plexus palsy due to birth injury. *J Pediatr Korean Med.* 2014;28(1):24-31.
 91. Kang KH, Lee SJ, Park EJ. The clinical study of night crying and night terror in children after traffic accidents. *J Pediatr Korean Med.* 2015;29(4):90-6.
 92. Kim EJ, Min SY, Kim JH. A case study of contralateral occurrence after unilateral repair of hydrocele in children. *J Pediatr Korean Med.* 2015;29(1):44-9.
 93. Lee JN, Kim DG, Lee JY. Report on seven cases on patients with autism spectrum disorder treated by Kwakhyangjungkisanhapyukmijihwangtang-gamibang. *J Pediatr Korean Med.* 2015;29(1):50-9.
 94. Im JY, Jang IS, Kim MS, Jeong MJ. A case report on superficial second-degree burn of an infant's forearm. *J Pediatr Korean Med.* 2016;30(4):1-7.
 95. Jeon BR, Min SY, Kim JH. A case report of Helicobacter pylori-related iron deficiency anemia in a child; Review of western literature. *J Pediatr Korean Med.* 2016; 30(3):42-51.
 96. Jeon BR, Min SY, Kim JH. A case study of nocturnal enuresis in two children by focusing sleep-wake transition. *J Pediatr Korean Med.* 2016;30(1):1-8.
 97. Kim JE, Baek JH. Effects of herbal medicine for growth of children: a retrospective study. *J Pediatr Korean Med.* 2016;30(4):87-98.
 98. Koo EJ, Lee JH, Han JK, Kim YH. The clinical study of cervical sprain by car accidents in children. *J Pediatr Korean Med.* 2016;30(4):19-28.
 99. Lee SY, Yu SA. A clinical study of a child with tic-disorder with allergic rhinitis. *J Pediatr Korean Med.* 2016; 30(1):40-4.

100. Lee EJ, Lee BR, Lee JH, Chang GT. A case report of infant diagnosed as sik-gan. *J Pediatr Korean Med.* 2016;30(3):61-8.
101. Lee SJ, Park EJ. A case report of treating adenoidal hypertrophy by Gwakyangjeonggisang-gamibang. *J Pediatr Korean Med.* 2016;30(4):8-18.
102. Jeon BR, Min SY, Kim EJ. A case study of an olfactory disorder in two patients combined by intranasal acupuncture treatment. *J Pediatr Korean Med.* 2017;31(2):25-33.
103. Lee SJ, Park EJ. A case report of treating recurrent hematuria in childhood by Yukmijihwangtanggamibang. *J Pediatr Korean Med.* 2017;31(2):57-63.
104. Lee HL, Yoo HS, Park SC. A case report of idiopathic precocious puberty in two children. *J Pediatr Korean Med.* 2017;31(1):74-81.
105. Shin HJ, Lee BR, Lee JH, Chang GT. A clinical study of treating autism spectrum disorder in childhood. *J Pediatr Korean Med.* 2017;31(4):49-60.
106. Yun YJ, Kim SC, Yu SA. Three cases of developmental delay due to cerebral palsy treated with Korean medicine. *J Pediatr Korean Med.* 2017;31(1):82-91.