



Review Article

## A Study on the Significance of Acupuncture and Pharmacopuncture Therapy for Cold Accumulation Through a Literature Review on the Historical Development Process in Cold Accumulation Treatment



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### ABSTRACT

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In order to secure clinical evidence for the treatment of cold accumulation (CA), this study reviewed and analyzed 91 records of literature and related records. To perform a classical literature search, the Oriental Medicine Classic databases and the Uibujeonrok electronic data were searched. Books on Immunopharmacopuncture (IP) were also reviewed. A common etiology for CA was attributed to the abdomen, while the detailed sites of the abdomen differed. In IP, CA had a more comprehensive list of symptoms of physiological and pathological significance. As for the treatment of CA, typically, herbal medicine was used until the end of the Korean Empire period, and moxibustion treatment on CV4, CV6, CV-12, ST36, EX-B4, and conduction exercise therapy were also reported. Since 1965, acupuncture needle-based invasive treatment such as acupuncture for CA, and IP have been described in IP theory. Consequently, the treatment of CA (as described in the IP theory), was considered to be a more advanced method of treatment compared with the existing classical treatment methods.

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### Introduction

Recently, Korean medicine (KM) doctors have been seen online, frequently advertising various KM treatment methods such as acupuncture, pharmacopuncture, moxibustion, and herbal medicines used for the treatment of cold accumulation (CA).

The term CA was mentioned in classical literature, however, the report of acupuncture or pharmacopuncture as a treatment method for CA only began in the 1960s, since the publication of immunopharmacopuncture (IP) theory [1].

The term CA was 1<sup>st</sup> mentioned in Majjing to describe a person swaying, with a large guan pulse, and fine cun and chi pulses [2]. The individual must have CA under the epigastric region, bind

and gather aggregation-accumulation, and would seek out hot food [2]. In classical literature, herbal medicine treatments were typically reported in this regard, and moxibustion treatment was also reported.

The IP theory, which was the beginning of pharmacopuncture, began to spread when Sang-cheon Nam published the article “Meridian injection therapy” in 1965, and the 1<sup>st</sup> and 2<sup>nd</sup> volumes of his book Meridian [3] in 1967. IP therapy was reportedly conceived by Nam while self-treating CA and significance was placed on acupuncture and pharmacopuncture treatments [4,5].

Just as the development of academic and scientific rationale evolves and improves understanding through new discoveries, this is similar in the field of KM. Treatment in KM has traditionally

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comprised acupuncture and herbal remedies for thousands of years; however, with the passage of time, Eastern and Western cultures have mutually influenced each other. In the West, treatment methods similar to acupuncture meridian therapy have been formed, and new treatment methods have been created using instruments and methods that were not previously available in KM. Pharmacopuncture, a comprehensive stimulation method that combines acupuncture with the injection of a drug, is a treatment method that was born as a result of this phenomenon [6].

In this study, the meaning and treatment methods for CA by era were reviewed using literature related to CA. Aspects of change and improvement were examined, and the significance of acupuncture needle-based invasive treatment methods for CA were reviewed.

**Materials and Methods**

**Selection of materials**

For the classical literature search, in the main, the Oriental Medicine Classic databases of the Korea Institute of Oriental Medicine [7] were used. In addition, Uibujeonrok electronic data (an encyclopedia compiled by synthesizing medical books up to 1,723) was used. Books on immune pharmacopunctureology [4,5] were also reviewed. Literature and electronic data were searched using “cold accumulation” as the keyword search term.

**Search methods**

As a result of the keyword search, 90 records were retrieved from the Oriental Medicine Classic databases and 20 records were retrieved from the Uibujeonrok electronic data. Among these 110 records, 4 duplicates were excluded. The 106 records were screened and assessed for eligibility. There were 15 records excluded corresponding to whether the pathology was indicated ( $n = 3$ ), whether aggregation-accumulation was used as a verb ( $n = 8$ ), formation of obstinate cold accumulation heat (stagnation, gathering, cold;  $n = 2$ ), and obstinate cold-accumulated heat-related prescription names ( $n = 2$ ). There were 91 records compared and analyzed for CA in classical literature and IP theory (Fig. 1; Table 1).

Table 1. Cold Accumulation Search Results in Classical Oriental Medicine Literature.

Period	Book title	N
Jin and Sui-Tang dynasties	Maijing	2
	Qianjinfang	5
Songwon period	Taipingshenghuifang	1
	Seuideughyobang	3
	Zhenjiashuyao	1
	Rumenshiqin	2
	Danxixinfā	1
	Uihaggangmog	2
	Yixuerumen	1
	Bosaengbiyo	1
	Pyeonoksimseo	1
	Youngdongbaekmun	3
	Zhengzhizhunsheng	3
	Youyouxinshu	2
	Hyangyakjipseongbang	1
	Uilyuwonyung	1
	Jingyuequanshu	5
Ming, Qing, and Joseon dynasty	Bencaogangmu	15
	Donguibogam	1
	Yeogwagyeonglyun	1
	Jinwooshinbang	1
	Sauigyeongheomban	1
	Sanbomyungbangron	1
	Geubyubang	2
	Bencaogangmushihi	2
	Dangoggyeongheombang	1
	Gwangjebigeup	2
	Bonchojeonghwa	6
	Uihui	9
	Uibanghappyeon	1
	Dongeuisoosebowon	2
	Uiwongeoang	1
Yolyag	1	
Korean Empire period	Danbangbiyogyongheomsinpyeon	1
	Sujingyeongheomsinbang	1
	Byeolchodanbang	1
	Susebigyeol	2
	Uigabigyeol	1
Jesebogam	3	
<b>Total</b>		<b>91</b>

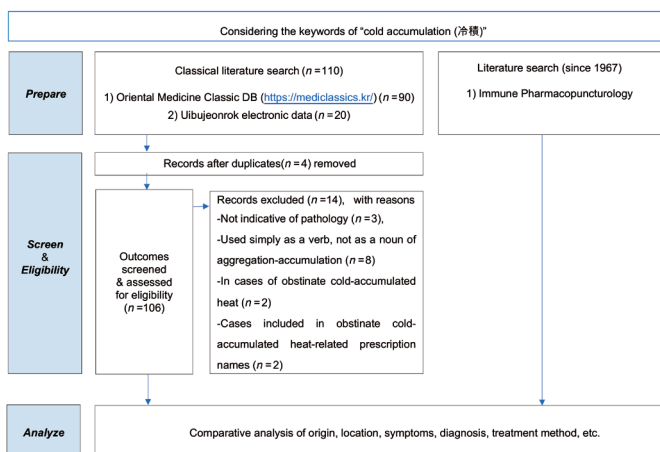


Fig. 1. Flow chart of the literature review process.

## Results (Table 2)

### *Jin and sui-tang dynasties*

Examination of the contents of *Maijing* [2,7] and *Qianjinfang* [7,8], which mention CA in the Jin dynasty and Sui-Tang dynasties, showed that CA was reported to occur in the epigastric region, the guan pulse was calm and large, and the cun and chi pulses were fine. Furthermore, in *Maijing*, cinnabar field was reported as the site where CA occurred in addition to the site under the epigastric region. In *Qianjinfang*, with regard to the treatment of CA, *Janggyeonjegu* was prescribed for abdominal pain originating from obstinate CA-gathering, and *Akseolyeo* was prescribed for obstinate CA.

### *Songwon period*

On examining *Taipingshenghuifang*, *Seuideughyobang*, *Zhenjiashuyao*, *Rumenshiqin* and *Danxixinfu*, which mentioned CA in the Songwon period, information on the form, location, and the prescription for pulse diagnosis for CA was reported. In *Taipingshenghuifang*, the location of CA was reported as between the viscera and bowels, and the symptom was stomach bloating. *Seuideughyobang* reported diarrhea in children as a symptom, and *Hongwonja*, *Ojeoksan*, and *Hyangsosan* were reported as herbal medicine treatments [7]. In *Zhenjiashuyao* [9], if the right chi pulse was a hidden pulse, it was called cold-phlegm and CA, *Zhenjiashuyao* reported a different pulse from *Maijing* and *Qianjinfang*. In *Rumenshiqin* [10], an inverted cup-shaped CA in the epigastric region was reported to be present, which sounded like water when touched, and felt like ice when heated with hot hands. In *Danxixinfu* [11], the prescription of *Gugbangsogamhwan* was suggested for diarrhea caused by CA.

### *Ming, Qing, and Joseon dynasties*

In the Ming and Qing dynasty, in relation to CA, the mention of pediatric patients was particularly frequent, and reports of diarrhea and edema increased.

In *Uihaggangmog* [7], it was first stated that the location of CA was below the navel, and caused pain and diarrhea. The 2nd statement was that the location of CA was in the epigastric region, and the inverted bowl-shaped CA sounded like water when touched, and was cold. Associated with infertility, CA was described as a cun pulse that was sunken and slow; a chi pulse that was surging, large, and powerful (associated with infertility), and prescriptions for treatment such as *Samseongsan*, *Baekchuljojungtang*, *Oryeongsan*, and *Samultang* were advised. In *Yixuerumen*, when all 3 parts of the pulse were sunken and slow, CA was reported to be present, as the skin became dry, the source was consumed, and the medicine reported for treatment was *Vulpedis Caro*.

*Bosaengviyo* described how to relieve epigastric CA with conduction exercise therapy from the epigastric to the navel, and it was the only case in which conduction exercise therapy was mentioned. In *Pyeonoksimseo*, epigastric CA was

diagnosed as a pulse of the snake passing by, and the reported symptoms were diarrhea, mental fatigue, and increased sleep. In *Youngdongbaekmun*, diarrhea was mainly reported as a symptom of CA, and abdominal pain (spleen qi CA) was also mentioned; for prescription, *Molseokjahwan*, *Insamsan*, *Leejungtang-gagam*, *Myristicae Semen*, *Naebokdan*, *Bulhwangeumjeonggisan*, *Gwaneumsan*, *Eunbaeksangagam*, *Hyangbagsan*, *Baegchulsan*, *Jojungsan*, *Boanhwan*, *Gameunghwan*, *Samleungjeon*, and *Chimhyangjeon* (spleen qi CA) were mentioned [12].

*Zhengzhizhunsheng* [13] explained that diarrhea was related to CA, abdominal distending, paraumbilical and hypochondriac aggregation. In *Youyouxinshu* [14], diarrhea in children caused by the CA invasion of spleen viscera was also explained and the prescription included *Sinseonogbundan* and *Sulphur*.

In *Hyangyakjipseongbang*, irregular menstruation was reported as a symptom of CA, and *Jinjinwan* was the prescription. In *Uilyuwonyung*, *Allii Fistulosi Bulbus* and *Glycine Semen Preparata* were reported as suitable medicinal herbs. In *Jingyuequanshu*, diarrhea was reported as a symptom of CA, and the medicinal herbs, *Jinguk-hwan*, *Anbisan*, and *Piperis Nigri Fructus* were reported as the prescription. In *Bencaogangmu*, the location of CA was reported to be in the lower abdomen and inside the abdomen, with symptoms of diarrhea, and *Macrobrachii Corpus* reported as the cause of CA, with the treatment including herbs of *Clematis patens*, camel oil, *Iris sanguinea* Hornem, *Arsenicum Sublimatum*, *Iris pallasiivar.chinensis* Fisch, *Citrus unshiu* Markovich, *Piperis Nigri Fructus*, *Crotonis Semen*, *Trogopterorum Faeces*, and *Canis lupus chanco* Gray [7].

In *Donguibogam*, *Jinwooshinbang*, *Dangogyeongheombang*, and *Uiwongogang* as a treatment for obstinate CA cold, *Gami-Leejungtang* was prescribed, and in *Yeogwageonglyun*, cinnabar field and CV3 were reported as the location of CA.

In *Sauigyeongheombang*, vomiting was reported as a symptom of CA and ginger and *Pinellia ternata* were the prescribed medicinal herbs. In *Sanbomyungbangron*, the location of CA was the spleen-stomach, and *Crotonis Semen* was prescribed as medicinal material. In *Guebyubang*, vomiting, diarrhea, and heartache were reported as symptoms of CA; *Citri Fructus Praeparata* was prescribed for vomiting and diarrhea, and *Amomi Rotundus Fructus* was prescribed for heart pain. In *Bencaogangmushihi*, dysentery and diarrhea were reported as symptoms of CA, and CA was described as a “white and frozen fish brain” stool. The medicines reported for treatment were *Jiseongdan*, *Jiseongsandan*, *Bruceae Fructus*, and *Zingiberis Rhizoma*. In *Gwangjebigeub*, the location of CA was reported as the upper stomach, and the symptoms reported upper stomach cold pain, and the prescriptions were *Saenggangtang* and *Clematis patens*. In *Uihui*, the locations of CA were reported as the upper stomach and kidney, the symptoms were a cough, pain, vomiting, and running piglet, and the treatment was oil, honey, *Bletillae Rhizoma*, ginger, and mud for an old cough. *Saenggangbanhatang* was prescribed for CA vomiting, *Poria Sclerotium* and *Foeniculi Fructus* for kidney accumulation, external medicine (*Cheongumbongjego*) for CA, medicinal herbs (*Apis cerana* Fabricius, walnut, dried persimmon, pine, perilla, *Zizyphi Fructus*) for CA, *Clematis patens* for upper stomach CA were reported [7].

Table 2. Results of Literature Review Analysis on Cold Accumulation.

Period	Book title	Location	Symptoms	Diagnosis	Treatment	Others	
Jin and Sui-Tang dynasties	Maijing	1. Under the epigastric region 2. Cinnabar field		1. Guan pulse-swaying and large, cun and chi pulses-fine 2. Wrist pulse: soggy and tight pulse			
	Qianjinfang	Under the epigastric region		Guan pulse: swaying, large, cun and chi pulses: fine	Janggyeonjegu: obstinate cold accumulation-gathering abdominal pain, Akseolyeo: obstinate cold accumulation		
Songwon period	Taipingshenghuifang	Between the viscera and Bowels	Stomach bloating				
	Seuideughyobang		Diarrhea in children			Hongwonja, Ojeoksan, Hyangosan	
	Zhenjiashuyao			Right cun pulse: hidden pulse			
	Rumenshiqin	Epigastric region	Inverted cup-shaped CA in the epigastric region, which makes a sound of water when touched and is like ice when heated with hot hands.				
	Danxixinfang		diarrhea			Gugbangsogamhwan	
Ming, Qing, and Joseon dynasty	Uihaggangmog	1. Below the navel 2. Epigastric region	1. Pain and diarrhea. 2. Inverted bowl-shaped CA sounds like water when touched, cold, infertility	2. Cun pulse: sunken, slow, chi pulse: surging, large, and powerful	2. Samseongsan, Baekchuljojungtang, Oryeongsan, Samultang		
	Yixuerumen		Skin is dry and the source is consumed.	Three positions pulse: sunken and slow	Vulpedis Caro		
	Bosaengbiyo	From the epigastrium to the navel.				Conduction exercise therapy	
	Pyeonoksimseo		Diarrhea, mental fatigue, increased sleep	Pulse of the snake passing by			
	Youngdongbaekmun		Diarrhea, abdominal pain (spleen qi CA)			Molseokjahwan, Insamsan, Leejungtang-gagam, Myristicae Semen, Naebokdan, Bulhwangeumjeonggisan, Gwaneumsan, Eunbaeksangagam, Hyangbagsan, Baegchulsan, Jojungsan, Boanhwan, Gameunghwan, Samleungjeon, Chimhyangeon	
	Zhengzhizhunsheng		Diarrhea, abdominal distending, paraumbilical, hypochondriac aggregation				
	Youyouxinshu	Spleen viscera	Diarrhea in children			Sinseonogbundan, Sulphur	
	Hyangyakjipseongbang		Irregular menstruation			Jinjinhwan	
	Uilyuwonyung					Allii Fistulosi Bulbus, Glycine Semen Preparata	
	Jingyuequanshu		Diarrhea			Jingukhwan, Anbisan, Piperis Nigri Fructus	
	Bencaogangmu	Lower abdomen, inside the abdomen	Diarrhea			Clematis patens, camel oil, Iris sanguinea Hornem, Arsenicum Sublimatum, Iris pallasiivar. chinensis Fisch, Citrus unshiu Markovich, Piperis Nigri Fructus, Crotonis Semen, Trogopterorum Faeces, Canis lupus chanco Gray	Macrobrachii Corpus (cause of CA)
	Donguibogam					Gami-Leejungtang: obstinate cold accumulation cold	

Table 2. (continued).

Period	Book title	Location	Symptoms	Diagnosis	Treatment	Others
Ming, Qing, and Joseon dynasty	Yeogwageonglyun	Cinnabar field and CV3				
	Jinwooshinbang				Gami-Leejungtang: obstinate cold accumulation cold	
	Sauigyeongheomban		Vomiting		ginger and Pinellia ternata	
	Sanbomyungbangron	Spleen and stomach			Crotonis Semen	
	Geubyubang		Vomiting, diarrhea, and heartache		Citri Fructus Praeparata: vomiting and diarrhea, Amomi Rotundus Fructus: CA heart pain	
	Bencaogangmushi		Dysentery, diarrhea, a “white and frozen fish brain” stool.		Jiseongdan, Jiseongsandan, Bruceae Fructus, Zingiberis Rhizoma	
	Dangoggyeongheombang				Gami-Leejungtang: obstinate cold accumulation cold	
	Gwangjebigeup	Upper stomach	Upper stomach cold pain		Saenggangtang, Clematis patens moxa on CV4, CV6, CV12, ST36, EX-B4	
	Bonchojeonghwa				Soju, Piperis Nigri Fructus, Trogopterorum Faeces, Magnoliae Cortex, Canis lupus chanco Gray	Macrobrachii Caro: causative agent
	Uihui	Upper stomach Kidney	Cough, pain, vomiting, and running piglet		oil, honey, Bletillae Rhizoma, ginger, and mud for an old cough, Saenggangbanhatang for vomiting, Poria Sclerotium, Foeniculi Fructus for kidney accumulation, external medicine (Cheongeumbongjeho), Apis ceranaFabricius, walnut, dried persimmon, pine, perilla, Zizyphi Fructus, Clematis patens moxa on CV4, CV6, CV12, ST36, EX-B4	
	Uibanghappyeon		Vomit		black beans as a decoction of ginger	
	Dongeuiseowon		Obstinate cold accumulation stagnation, lesser yin person interior cold disease induced from the stomach affected by cold, and stuffy stomach		Crotonis Semen	
	Uiwongeoang				Gami-Leejungtang: obstinate cold accumulation cold	
	Yolyag	Around the navel	Distending pain around the navel, fullness of CA, constant abdominal gentle pain, inability to digest down of food	Delayed pulse (deficiency cold of lower energizer)		Ojeoksangabuja
Korean Empire period	Danbangbiogyongheoms inpyeon				Achyranthis Radix	
	Sujingyeongheomsinbang			Sunken and firm pulse		
	Byeolchodanbang				Crotonis Semen	
	Susebigyeol	Large intestine			Clematis patens together with ginger soup, Soju	
	Uigabigyeol		Diarrhea, dysentery		Gameunghwan	
Jesebogam		Pain under epigastric region	Firm pulse		Leejungtang, Ojeoksan, Manbyeonghwan, Pyeongwisan plus ginger, Cinnamomi Ramulus, Gyegangyangwitang	
After 1965	Immuno-Pharmacopuncture theory	Calluses that are attached to the front of the lumbar body	The digestive system was especially weak and sensitive to cold.	Pressing in CV6 and CV7	Cold accumulation acupuncture, HO or CS Immuno-Pharmacopuncture	

CA, cold accumulation; HO, a pharmacopuncture extract which was named after Honghwaja (Carthamus tinctorius L.); CS, care special pain (Carthamus tinctorius L, Sinapis alba L., Raphanus sativus L., and Persicae Semen).

Gwangjebigeup and Uihui, both reported moxibustion treatment including 500–600 moxa on CV4, CV6, 500 moxa on CV-12, 49 moxa on ST36, and 100 moxa on EX-B4.

In Bonchojeonghwa, Macrobrachii Caro was denoted as a causative agent, and the medicines, Soju, Piperis Nigri Fructus, Trogopterorum Faeces, Magnoliae Cortex, and Canis lupus chanco were prescribed. In Uibanghappyeon, the symptom of CA was vomiting, and the prescription was to take black beans as a decoction of ginger. In Dongeuisoosebowon, obstinate CA stagnation, lesser yin person interior cold disease induced from the stomach affected by cold, and stuffy stomach were the symptoms, and Crotonis Semen was the therapeutic agent prescribed. In Yolyag, the location was described as around the navel, the diagnosis was a delayed pulse due to a deficiency cold of lower energizer, and the symptoms were distending pain around the navel, fullness of CA, constant gentle pain in abdomen, and inability to digest food, and the prescription was Ojeoksangabuja [7].

### ***Korean Empire period***

Danbangbiyogyongheomsinpyeon reported Achyranthis Radix, and Byeolchodanbang reported Crotonis Semen. In Sujingyeongheomsinbang, CA was diagnosed as a sunken and firm pulse. In Susebigyeol, the large intestine was reported as the location for CA, and Clematis patens together with ginger soup and Soju were the prescribed medicines. In Uigabigyeol, diarrhea and dysentery were reported as symptoms, and Gameunghwan was the prescription. In Jesebogam, pain under the epigastric region was reported as a symptom, a firm pulse was the pulse diagnosis, and Leejungtang, Ojeoksan, Manbyeonghwan, Pyeongwisang plus ginger, Cinnamomi Ramulus and Gyegangyangwitang were included in the prescription [7].

### ***After 1965 (IP theory)***

In 1965, when Nam's IP theory was formulated, CA was intensively reported. In the IP theory, a meridian with a cold nature (CM) was regarded as CA, and in relation to the symptoms of CA, the digestive system was determined to be especially weak and sensitive to cold. The location of CA was considered to be a callus that was attached to the front of the lumbar body, and the diagnosis of CA was reported when there was pressing in CV6 and CV7. In addition, the IP theory proposed CA was not simply pathological it also involved meridians and immune tissues. Regarding the treatment of CA, it has been reported that because CA can freely send the sensation of qi; if the sexual organ was weak, CA can send qi towards the sexual organ; towards the liver, if the liver was weak; and towards the stomach, if the stomach was weak. Regarding the pathology of CA, if the CM was about half the size of an apple, the condition/disease was judged according to its location or developmental direction. The direction of the CM around the navel was described: if developed in the 11 o'clock position, the liver or gallbladder was bad; if at 12 o'clock, the stomach was bad; if it was at 2 o'clock, the pancreas was bad; if at 9 or 3 o'clock, the transverse colon or kidney was bad; if at 4 o'clock, ureter and descending colon were bad; the lymphatic system was bad if at 5 or 7 o'clock;

the uterus or the reproductive organs were bad if at 6 o'clock; the cecum was bad if at 7 o'clock; and the ascending colon and right ureter were judged to be bad if at an 8 o'clock position. The direction of qi sensation was observably the same as the anatomical position of the viscera and bowels [15]. Regarding treatment of CA, the qi sensation can reportedly be freely sent towards the sexual organs if the sexual organs were weak, towards the liver if the liver was weak, towards the stomach if the stomach was weak, and so on. Acupuncture for CA therapy and IP therapy were suggested as 2 treatment methods.

### Acupuncture for CA therapy

The CM was palpated by pressing the conception vessel directly downwards so as not to be confused with the rectus abdominis muscle. The acupuncture treatment point was between the 2nd and 3rd finger below the navel. Acupuncture for CA therapy used general disposable stainless steel acupuncture needles (0.30 × 40 mm) inserted to about 1 cm from the point of touching the CA, and stimulated the qi sensation to spread 1–2 times [2,4].

### Pharmacopuncture

If the body was extremely weak, acupuncture for CA was prohibited and oil-based pharmacopuncture IP, Honghwaja (HO) or care special pain (CS) was administered. Excessive stimulation may cause diarrhea that stops spontaneously without the use of antidiarrheal agents [4,5].

### **Discussion**

Historically, acupuncture has been performed in various clinical areas of KM practice. Acupuncture treatment is an integral part of Korean medicine and alternative medicine around the world, and the evidence for clinical effects is gradually increasing [16]. However, among the various KM treatment methods for CA, acupuncture (acupuncture and pharmacopuncture) a needle-based invasive treatment, could not be found in classical literature going back as far as the 7<sup>th</sup> century and the Tang dynasty up to the Korean Empire in the late 19<sup>th</sup> – early 20<sup>th</sup> century. The first mention of acupuncture and pharmacopuncture in the IP theory was developed in the 20<sup>th</sup> century (1965) [3]. As a KM treatment, moxibustion, was mentioned in the classical literature. Although moxibustion is currently used for treatment in clinical practice in combination with acupuncture, it was developed independently and has been used differently to treat symptoms [17]. Pharmacopuncture is a novel type of acupuncture therapy, where herbal medicines are delivered to acupoints during acupuncture to adjust functions of the living body and improve pathological conditions to treat conditions/diseases [5,6]. There has been a previous study which was involved in a brief investigation into the origins of CA [1]; but in this review, classical literature and data, and studies that mentioned CA were reviewed. Analysis was based on location of CA, symptoms, diagnosis, treatment, and exacerbation factors [1]. Therefore, in this study, to determine the significance of acupuncture and pharmacopuncture treatment of CA, literature was compared before and after the publication of the IP theory.

When CA appeared in classical literature, CA was reported to

be under the pit of the stomach, or below the navel or cinnabar field. CA appeared to be reported similarly in the Jin dynasty to the Ming and Qing dynasties. In particular, the expression “inverted bowl-shaped CA in the epigastric region” which appeared in Rumenshiqin [10], and Uihaggangmog [7] is meaningful because it refers to the palpability of the mass, and not just a feeling of cold. Moreover, it has been reported in Bencaogangmushiyi [7] that a “white and frozen fish brain-shaped” stool was called CA, and that CA existed as an actual tissue. Looking at the concept of CA mentioned in the IP theory, the location was formed around the navel and was usually formed in the anterior part of the 2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup> lumbar vertebrae. In people with a weak body, the size of the CA is so large that the position of the CA can go up to the 1<sup>st</sup> lumbar vertebra in some cases. Depending on the location and development direction of CA, the condition/disease can be identified [4,5]. It was determined that the classical literature and literature following the IP theory have a certain degree of connection in terms of the location of CA, and common causes of CA can be broadly divided into qi deficiency blood cold, spleen–stomach deficiency cold, and coldness of the human body.

In the IP theory (the physiological function of CA), it is reported that qi occurs in CM, and shows the physiology and pathology of the viscera and bowels of middle and lower energizers, and is particularly sensitive to the digestive system. At the time of acupuncture for CA, acupuncture sensation is transmitted to the patient's weak organs or in the direction of the problem. It was reported that CM develops directly proportionally to the condition/disease state and is inversely proportional to body weight [4,5,15]. This is different to CA and is only a cause of a condition/disease. In the IP theory CA is reported to be the origin of resistance, and the main resistance meridian of a cold constitution, which causes pathology when there is overdevelopment, so it encompasses both physiological and pathological significance.

Furthermore, in classical literature, pathologically, the relationship with the spleen and qi and blood were both weak, and with diarrhea and digestive conditions/diseases was intensively reported. In addition, in classical literature, for CA, pathologically, it is related to the spleen and caused by weakness in both qi and blood, and diarrhea and digestive diseases are reported intensively. The classical literature concerning CA has many similarities with IP theory. However, aggregation–accumulation in the KM literature was reported to occur as a pathological result. This has many similarities to the characteristics of tumors from a modern medical point of view, and is different to CA in the IP theory where CA has both a physiological significance and a pathological significance. In the classical KM literature, cold conditions, pain, digestive conditions/diseases (especially diarrhea), and sterility are mainly reported, but in the IP theory, the therapeutic effect is subdivided according to the direction of qi sensation by acupuncture, and it can be used for the treatment of various conditions/diseases, including the improvement of systemic immune function such as lymph function. It seems that the IP theory has further expanded the scope of treatment.

For the treatment of CA, the prescription to use a warming agent was mainly reported in classical literature, and during the Ming, Qing, and Joseon dynasties, moxibustion was reported twice, and

conduction exercise therapy was reported once, and there was no report of acupuncture. In the case of moxibustion, it is reported twice with the same content in both Gwangjebigeup and Uihui, and it is thought that this is because there is a part where Uihui quoted the Gwangjebigeup 1<sup>st</sup> edition [18]. The acupoints for moxibustion treatment included the three points of the abdomen (CV4, CV6, CV-12) and ST36 and EX-B4 that can be used for spleen–stomach condition/disease [19].

In the modern era, the IP theory explains that the location of CA development occurs around the navel, and does not form like a band, but occurs like a flying saucer or a hill that spreads round the 2<sup>nd</sup> to 4<sup>th</sup> vertebrae. In addition, the IP theory subdivides the development direction of CA and suggests a treatment method whereby the qi sensation stimulated would be sent using only acupuncture or pharmacopuncture. Acupuncture or pharmacopuncture treatment for CA is located between the 2<sup>nd</sup> and 3<sup>rd</sup> fingers below the navel at the conception vessel for direct needling, which is between CV6 and CV7. In the IP theory, acupuncture for CA was reported to deliver energy to the patient's weak organs or to the problematic direction by directly stimulating the CA using general acupuncture needles. It was also explained that if the body was extremely weak, oil-based pharmacopuncture IP, HO or CS should be administered instead of general acupuncture to stimulate the qi sensation. As a treatment precaution, it was explained that excessive stimulation may cause temporary diarrhea, which stops spontaneously without the use of antidiarrheal agents. These descriptions appear to have specifically presented a method that enables treatment regardless of deficiency and excess in relation to CA in the IP theory. Acupuncture and pharmacopuncture techniques, which were not presented in classical literature, can be considered to have expanded technology in the field of KM treatment. In addition, acupuncture and pharmacopuncture can be a great advantage when treating patients who cannot take drugs or who cannot afford drug treatment.

As a result of comparing the meanings and treatment methods for CA in classical literature and literature following the IP theory (although the term CA had different meaning and treatment methods), it was determined that CA had some similarities in terms of location, cause of occurrence, and pathology. The IP theory 1<sup>st</sup> proposed by Nam in the 1960s, has been subdivided into a more advanced form based on the existing KM theory. In addition, the IP theory has historical significance because the existing KM theory has been modernized and has evolved into a novel therapeutic field.

Through this study, the IP theory (which encompassed new acupuncture therapies) has changed and developed as per the passage of time. The IP theory has been the basis of modernizing the existing KM theories and developing treatment methods for CA. In addition, the treatment method for CA was developed adding to the existing herbal medicines, moxibustion, and conduction exercise therapy. Since the late 1980s, health policy-makers in industrialized countries have been interested in the adoption and dissemination of new health technologies [20–23] which have been assessed by experts based on scientific evidence [24,25].

This study is limited because it focuses on CM and compares the significance of some classical literature with IP intrinsic theory. It is necessary to find more diverse classical literature. Regarding the

meaning of unique acupoints and meridians in the IP theory, KM doctors who have been familiar with classical literature may face difficulties. For KM doctors who use the IP theory to more easily understand the theory and use in clinical practice, comparative and review studies with the classical KM literature are needed for more diverse IP-specific acupuncture points and meridian concepts in the future.

### Author Contributions

Conceptualization and Methodology: JHH and JHJ, Formal investigation: JHH, JSK and JHJ, Data analysis: JHJ, Writing original draft: JHH and JHJ, Writing - review and editing: JHH, JSK and JHJ.

### Conflicts of Interest

The authors declare that they have no competing interests.

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### Ethical Statement

This research did not involve any human or animal experiments.

### Data Availability

All relevant data are included in this manuscript.

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