International Journal of Research and Review
www.ijrrjournal.com E-ISSN: 2349-9788; P-ISSN: 2454-2237

*Review Article*

# Iron Deficiency Anaemia & *Ferrum Phosphoricum*: A Systematic Review

**Dr. Shevanta S. Jadhav[1*], Dr. Prerna Tiwari[2*], Dr. Kusum Lata[1*], Dr. Esha Tyagi[2*], Dr. Priya Shete[1*], Dr. Jayshree A. Rakh[1*], Dr. Rishabh Pandey[1*], Dr. Arun B. Jadhav[3]**

[1]P.G. Scholars, Department of Practice of Medicine, Bharati Vidyapeeth Deemed to be University, Homoeopathic Medical College & Hospital, Pune, Maharashtra, India.
[2]P.G. Scholars, Department of Materia Medica, Bharati Vidyapeeth Deemed to be University, Homoeopathic Medical College & Hospital, Pune, Maharashtra, India.
[3]Principal, Bharati Vidyapeeth Deemed to be University, Homoeopathic Medical College & Hospital, Pune, Maharashtra, India.

*These authors contributed equally to this work.

Corresponding Author: Dr. Kusum Lata

## ABSTRACT

Anaemia is defined as a reduced number of red blood cells (RBCs) or less than the normal amount of hemoglobin (Hb) in the blood. Ferrum phosphoricum is a homoeopathic medicine which improves the haemoglobin, in anaemic population. The objective of this review was to assess the effects of Ferrum phosphoricum in anemic patients. Searches were performed using different databases and authentic literatures from year 2000 to till date.

We retrieved 31 studies from the different databases and internet sites searches. After manually removing 08 duplicate studies. Seven reviewers independently screened 23 articles out of which 18 studies were excluded &05 studies were included in current review by applying modified down and black checklists. The primary reasons for excluding studies were as follows: only abstract articles, in vivo & vitro studies, IDA with other clinical, articles in other languages & not original studies.Limited researches have been done on present topic which requires further researches. There are various literatures available in homoeopathic Materia Medica and repertory but conducted clinical trials are limited. There is not enough evidence to reliably assess the possible role of homeopathy in iron deficiency anaemia. As well as randomized trials, there is a need for observational data to document the different methods of homoeopathic prescribing and how patients respond.

***Keywords:*** Ferrum phosphoricum, Iron deficiency anaemia (IDA), Homoeopathy, Modified down and black checklist, Haemoglobin (Hb).

## INTRODUCTION

Anemia is defined as reduced count of red blood cells or less than the normal amount of hemoglobin (Hb) in the blood. It can also be defined as a lowered ability of the blood to carry oxygen.

*Iron deficiency anaemia* is universal health issue Iron deficiency anaemia is characterized by a defect in haemoglobin synthesis, resulting in hypochromic and microcytic red blood cells. Iron deficiency can result either due to less nutritional supply, increased demand or blood loss due to any reason. Iron is an important micronutrient which is essential for various functions like cellular growth and differentiation, oxygen binding, transport and storage, enzymatic reactions, immune function, cognitive function, mental and physical growth etc. Hence deficiency of

iron can affect mental and physical growth which leads to decreased in learning capacity and daily activities.

IDA involves population of all age groups and both gender but more common in adolescence girls and pregnant women which leads to serious health problem. Anemia during pregnancy can significantly affect maternal health and increase in perinatal morbidity which is responsible for intra-uterine growth retardation and pre-term delivery. Similarly IDA in adolescent girls affects their physical work capacity and reproductive physiology because of increased iron demand, menstrual blood loss and infections.

According to a World Health Organization (WHO) 53% of all women have anaemia as per the National Family Health Survey 2015-2016 in India. Among this the prevalence of anaemia in adolescent girls (15-19 years) is 56%.

Homeopathy is one of the most widespread and most effective forms of complementary or alternative medicine. Although exact data on the frequency of use of homoeopathy in anaemia patients is not available, surveys among general practitioners, indicates that a significant proportion might seek additional advice from homoeopaths. The aim of this systematic review was to evaluate whether homoeopathic medicine Ferrum phosphoricum have a therapeutic action on the Iron deficiency anemia because no systematic review has yet been done to evaluate the evidence regarding homoeopathic treatment strategies in anaemia.

Ferrum phosphoricum is a specific *homoeopathic medicine for Anemia* which increases the haemoglobin level and it also break the tendency of low serum ferritin levels in blood. Ferrum phosphoricum attract the oxygen gives tonicity to circular fibers of vessels to contract and thus equalizing the circulation & also has action on intestinal villi to absorb, regulation of bowel movements, utilization of nutrients, micronutrients & reduction in iron intolerance. Thus Ferrum phosphoricum improve iron absorption from dietary sources or iron supplements and increases haemoglobin levels.

**Objectives**

The objective of this review was to evaluate the efficacy and effectiveness of homoeopathic medicine Ferrum phosphoricum in Iron deficiency anaemia.

## METHODS

**Search and Selection Criteria**

Computerized literature searches were performed to identify all clinical trials (RCT, non RCT), based on homoeopathic medicine Ferrum phosphoricum in Iron deficiency anaemia. Databases in present review were MEDLINE, Embase, CINAHL, AMED, PubMed, Google Scholar, Sci-Hub, Clinical Trials. Gov from 2000 to till date. Total 31studies were searched and out of which only 05 studies fulfilled the selection criteria. The entire material was screened for this review. Furthermore, our own extensive files as well as books on homeopathy and IDA were searched for relevant data. Language used for publication was strictly in English.

Clinical trials of homoeopathic medicine Ferrum phosphoricum along with other homoeopathic therapeutics with control group were included in this systematic review. Trials with Ferrum phosphoricum as one of several remedies & Ferrum phosphoricum as single remedy, or studies in which Ferrum phosphoricum had been administered concomitantly with other medicines were included.

All studies were read in full by all seven researchers. Data were extracted independently in a standardized, pre-defined fashion (Table 1). Methodological quality of the included trials was assessed using the score according to Modified Methodological Quality checklist developed by Downs & Black, 1998.

SELECTION CRITERIA:-

**Inclusion criteria:-**

- IDA with homoeopathic intervention.

- Both gender of all age groups.
- Articles based on homoeopathic medicines and IDA of last 18 years.
- Language strictly English only.
- All RCT and non RCT based on homoeopathic medicines and IDA containing full text articles was included in the review.

**Exclusion criteria:-**

- IDA with other systemic illness.
- Case studies.
- Only abstract.
- In vivo/vitro studies.
- Studies on IDA based on other therapies.

**Table 1: Summary of Included Review Articles.**

| Author, Year, Country | Design | Sample, Recruitment, Setting | Intervention | Control | Outcome Measures | Results |
|---|---|---|---|---|---|---|
| PrashantTamboli *et.al*, 2015, India | Experimental study single blind randomized placebo control trial | Multi stage sampling antenatal care in rural population Recurrence n =60, Setting: Dr. M. L. Dhawale Memorial Homoeopathic Institutes Bhopoli Unit. | Group A-Ferrum phosphoricum &iron supplementation=:41<br><br>Group B-Placebo & iron supplementation=19 | Group A-Ferrum phosphoricum & iron supplementation group: 41 patients<br><br>Group B-Placebo & iron supplementation group: 19 patients.<br>1 patient from group B was dropped | Hb levels in Pregnant women confirmed with USG in second or third trimester, suffering from mild to moderate anemia with Hb ranging from 7 to 10 gm%. | Ferrum phosph6X decrease the risk of iron deficiency anemia in second & third trimester during pregnancy & sustain the Hb levels in all trimesters without causing any adverse effects. |
| Dr. ParthAphale 2017,India | Non randomized | n =30, Female patients from age group 17-20 yrs Recruitment : structured interview session Setting: Dr. D.Y. Patil Homoeopathic Medical College & Research Centre, Pune. | Ferrum phosp 3x | No control group | Hb%, Iron level, Reduction in the symptoms. | The statistical analysis proves that Homoeopathy is significantly useful in these 30 cases of Iron Deficiency AnemiaOut of 30 cases 24 cases i.e. 80% showed marked improvement in symptoms. So Ferrum Phos 3X is very much useful in treatment of Iron Deficiency Anemia |
| Dr. Mamtha A. Gundimi 3 yrs from 2009 to 2012 India. | A quasi experimental pre and post treatment without control group. | 30 cases were included by screening test (Hb – 9 to 11 gm %, MCV, MCH, MCHC, Peripheral smear) Patients were follow up for 6 months and the test was repeated after 3 months and 6 months. Setting: Father Muller Homoeopathic Medical College, Mangalore. | Constitutional with different potencies from 30C to 1M depending on patients susceptibility Arsenic album, Calcareacarbonicum, Ferrum met, Ferrum phosphoricum, Phosphorus, Pulsatilla, Lycopodium, Sepia, Natrummuriaticum, Silicea. | No control group | ANOVA test was performed after the study. Conclusion from this study was drawn that constitutional medicines were more effective as compared to constitutional along with lecithin. | It was found that more prevalence in 21 to 30 years of age group, along with female predominance. Most common potency ranged from 200C to 1M. Pulsatilla was most indicated remedy. |

| **Table 1 to be continued…** | | | | | | |
|---|---|---|---|---|---|---|
| Dr. S.K. Chaitnaya Nandamudi 2010, India. | Non randomized study. | 30 cases were selected based on diagnosis considering Hb% (5-11 gm%), clinical history,, examination. Each case was followed up for 4 months. Setting: Father Muller Homoeopathic Medical College, Mangalore. | Constitutional medicines were prescribed using different potencies ranging from 6C to 1M. Alumina, Ferrum phos, Ferrum met, Silicea, SulphurPuls, Phos, Natmur Stram, Calc c. Cina, Calc p, and Lyco. | No control group | Constitutional remedies were effective in treatment of IDA. Calc Phosph was the most indicated remedy in this study. | Results of the study showed that most of the patients were falling in the age group 8-11 years. Female child was found to be predominant. |
| Dr. Anita Patil et,al 2014, India. | Randomized Control trial, Open label, parallel group study. | Total 219 girls were screened 9 were excluded due to severe menorrhagia. Where Hb% is less than 12gm% was included in study. Adolescence age group 10-18 years of age. Setting: Bharati VidyapeethKanyaPrashala, Dhankawadi, Pune 43. | Ferrum phos3x, 4 tabs twice a day along with constitutional medicine. | Group A- Ferrum phosph with Constitutional medicine. Group B-Only Constitutional medicine. Group C- Control group. | Hb% | Constitutional medicine with Ferrum phos has shown improvement in Hb%. |

**TABLE 2 : Rubrics related to IDA from different repertories :**

| NAME OF REPERTORY | RUBRICS & SUB RUBRICS MEDICINES |
|---|---|
| HOMOEOPATHIC MEDICAL REPERTORY *BY*-ROBIN MURPHY | Clinical - anemia, general<br>abel.abies-c.abrot.absin.Acet-ac.acetan.acon.agar.agn.Alet.aloealst-s.alum.alum-p.alum-sil.alumn.am-c.ambr.anil.ant-c.Ant-t.Apisapoc.aq-mar.Arg-met.Arg-n.Arg-o.Arn.Ars.ars-h.Ars-i.Ars-s-f.aur-ar.bac.bar-c.Bell.ben-d.ben-n.berb.beryl.bism.bol-la.Borx.bov.Bry.cadm-met.Calc.calc-ar.calc-i.calc-lac.Calc-p.calc-sil.calen.calo.camph-br.cann-i.carb-an.Carb-v.Carbn-s.carc.casc.Caust.cean.cedr.cham.Chin.chinin-ar.Chinin-s.chlol.chlor.chloram.chlorpr.cic.cinacob-n.Cocc.coch.coff.colch.coloc.Con.cortico.cortiso.crat.Crot-h.Cupr.cupr-ar.cupr-s.Cycl.dig.eucal.Ferr.ferr-act.Ferr-ar.ferr-br.ferr-c.ferr-cit.Ferr-i.Ferr-m.Ferr-p.ferr-pic.ferr-prox.ferr-s.franz.galeg.Galeo.goss.Graph.Ham.Hell.Helon.hep.Hydr.Ign.iod.ip.Irid-met.Kali-ar.Kali-bi.Kali-br.Kali-c.kali-chl.kali-fcy.kali-hp.kali-m.kali-n.Kali-p.kali-perm.kali-s.kalm.kres.lac-ac.lac-c.lac-d.Lach.lec.lyc.lyss.mag-c.mag-m.Mang.Med.Merc.Merc-c.mez.mill.Mosch.nat-ar.nat-br.Nat-c.nat-cac.nat-hchls.Nat-m.nat-n.Nat-p.Nat-s.nat-taur.Nit-ac.nux-m.Nux-v.ol-j.Olnd.ost.oxyg.paull.peti.petr.Ph-ac.Phos.Phyt.Pic-ac.pitu-a.Plat.Plb.Plb-act.psor.Puls.puls-n.rad-br.rhod.Rhus-t.ric.rob.rub-t.rutasabin.sacch-a.sacch-l.sal-ac.sarr.Sec.Senec.Sep.sil.sin-n.sol-ni.spig.Squil.Stann.Staph.stroph-h.stry-af-cit.Sul-ac.sulfa.sulfonam.Sulph.syc.tab.ther.thuj.Thyr.trif-r.trinit.tub.tub-sp.urt-u.ust.valer.vanad.verat.X-rayxan.zinc.zinc-ar.zinc-m.zinc-p.zinc-s. |
| | Clinical - anemia, general - iron, deficiency, anemia<br>abies-c.Abrot.Absin.Acet-ac.acetan.Alet.Alum.alum-p.alumn.Am-c.Ambr.Ant-c.Ant-t.aq-mar.Arg-met.arg-n.Ars.ars-i.ars-s-f.aur-ar.bar-c.Bell.bry.cadm-met.Calc.calc-ar.Calc-p.carb-an.Carb-v.Carbn-s.caust.Chin.Chinin-ar.chlor.cinacob-n.Cocc.coch.Con.Cupr.Cycl.dig.Ferr.Ferr-ar.Ferr-i.Ferr-m.Ferr-p.Ferr-s.franz.Graph.Hell.Helon.Hep.ign.Ip.Kali-ar.kali-bi.Kali-c.Kali-fcy.Kali-p.kali-perm.kali-s.lac-c.lach.lec.Lyc.lyss.Mang.Med.merc.Mill.Nat-c.nat-hchls.Nat-m.nat-p.Nit-ac.Nux-v.olnd.Paull.peti.Petr.ph-ac.Phos.phyt.pic-ac.Plat.Plb.Puls.rub-t.sabin.sacch-a.sacch-l.Senec.Sep.Sin-n.Spig.staph.Stry-af-cit.sul-ac.Sulph.thuj.ust.valer.vanad.Xan.zinc.zinc-m. |
| | Clinical - anemia, general - iron, deficiency, anemia - alternate days, symptoms, agg. - alum.<br>Clinical - anemia, general - iron, deficiency, anemia - anger, from - ferr.Nux-v.<br>Clinical - anemia, general - iron, deficiency, anemia - emotions, from - ign.nat-m.<br>Clinical - anemia, general - iron, deficiency, anemia – splenic - cean.rub-t.<br>Clinical - anemia, general - iron, deficiency, anemia - winter, in - Ferr.<br>Clinical - anemia, general - malaria, from -alst.Ars.Nat-m.ost.rob.<br>Clinical - anemia, general - menopause period, in - Chin.<br>Clinical - anemia, general - menorrhagia, from - arg-o.ars.Calc.calc-p.Cann-i.chin.crat.Cycl.Ferr.Ferr-p.Graph.Hydr.Kali-c.mang.Nat-m.Puls.sep.<br>Clinical - anemia, general - menstrual, derangements, from-ant-c.arg-o.ars.Bac.calc.calc-p.Cann-i.chin.crat.crot-h.Cycl.ferr.ferr-act.Ferr-p.goss.Graph.ham.helon.Hydr.kali-c.lac-ac.mang.nat-m.Puls.senec.sep.trif-r.xan.<br>Clinical - anemia, general - murmur, in pulmonary artery, with a-ben-d.<br>Clinical - anemia, general - nosebleed, from - am-c.bry.chin.ferr.ferr-act.Ferr-p.hydr.kali-c.Lach.nat-n.Phos.puls.<br>Clinical - anemia, general - nursing, mothers, in- acet-ac.alf.calc-p.Ferr-p.lec.<br>Clinical - anemia, general - nutritional, imbalance, from- acet-ac.alet.alf.alum.Calc-p.chin.Ferr.Ferr-p.helon.nux-v.Thyr.<br>Clinical - anemia, general - pernicious, anemia- Ars.calc.Carc.Crot-h.mang.nat-m.Phos.pic-ac.Thyr.trinit.<br>Clinical - anemia, general - skin, problems, with- kali-m.<br>Clinical - anemia, general - syphilis, from- ars.aur-ar.Calo.crot-h.ferr.mang.med.merc.<br>Clinical - anemia, general - tuberculosis, in- bac.<br>Clinical - anemia, general - young, girls- stroph-h.<br>Clinical - anemia, general - blood loss, anemia, after- ant-c.Arg-o.Ars.Bac.Calc.calc-p.Cann-i.Carb-v.Chin.crat.crot-h.Cycl.Ferr.ferr-act.ferr-p.goss.Graph.ham.Helon.Hydr.ign.kali-c.lac-ac.Lach.mang.nat-br.Nat-m.Nux-v.Ph-ac.Phos.Puls.sabin.senec.sep.staph.Sulph.trif-r.xan.<br>Clinical - anemia, general - menstrual, derangements, from- ant-c.arg-o.ars.Bac.calc.calc-p.Cann-i.chin.crat.crot-h.Cycl.ferr.ferr-act.Ferr-p.goss.Graph.ham.helon.Hydr.kali-c.lac-ac.mang.nat-m.Puls.senec.sep.trif-r.xan. |
| A SYNOPTIC KEY TO THE MATERIA MEDICA BY- C. M. BOGER | GENERALITIES - Anaemia, chlorosis, etc.-Ars.Calc.calc-p.CHIN.FERR.kali-c.Nat-m.nit-ac.nux-v.Phos.Puls.Sulph. |
| A CONCISE REPERTORY OF HOMOEOPATHIC MEDICINES BY- DR. S.R. PHATAK | A – Anaemia- ARS.CALC.Calc-p.CHIN.FERR.ferr-ar.Graph.Kali-c.lac-d.lyc.mang.med.nat-c.NAT-M.Nit-ac.Nux-v.Phos.pic-ac.plat.plb.Puls.senec.sep.sul-ac.SULPH.<br>A - Anaemia - grief, from- nat-m.ph-ac.<br>A - Anaemia - haemorrhage, after- Chin.Ferr. |

| **Table2 to be continued…** | |
|---|---|
| A CLINICAL REPERTORY TO THE DICTIONARY OF MATERIA MEDICA BY- JOHN HENRY CLARK | ANAEMIA. (44)- 1 acet-ac, 1 alet, 1 anil, 1 arg-n, 1 ars, 1 aur-ar, 1 benz-d, 1 calc, 1 calc-p, 1 carbn-s, 1 casc, 1 chin, 1 chlol, 1 cina, 1 cycl, 1 ferr, 1 ferr-ar, 1 ferr-m, 1 helon, 1 ip, 1 irid, 1 kali-bi, 1 kali-c, 1 kali-p, 1 lac-d, 1 mang, 1 merc, 1 nat-m, 1 nat-n, 1 ol-j, 1 oxyg, 1 petr, 1 pic-ac, 1 plb, 1 puls, 1 rub-t, 1 sil, 1 stann, 1 stroph, 1 sulph, 1 tab, 1 thyr, 1 urt-u, 1 verat |
| BOGER BOENNINGHAUSEN'S CHARACTERISTICS AND REPERTORY BY- C.M. BOGER | CIRCULATION - Congestions – anaemia- ACON.alum.ANT-T.*Arn*.ARS.*Bell*.BRY.CALC.CALC-P.*Carbv*.*Cham*.CHIN.*Cina*COCC.coff.*Coloc*.CON.CUPR.cycl.*Dig*.FERR.GRAPH.*Hell*.hep.*Ign*.iod.KALI-C.*Lac-d*.lach.LYC.mag-c.mag-m.*Merc*.mez.MOSCH.*Nat-c*.NAT-M.NIT-AC.nux-m.NUX-V.*Ph-ac*.PHOS.PLAT.*Plb*.PULS.rhod.RHUST.ruta*Sabin*.SEP.*Sil*.spig.SQUIL.stann.STAPH.SULPH.*Valer*.verat.zinc.<br>CIRCULATION - Palpitation - anaemia in- cycl.dig.eucal.*Ferr*.hydr.hyper.*Kali-c*.*Natm*.ac.*Puls*.senec. |
| BOENNINGHAUSEN THERAPEUTIC POCKET BOOK BY- T. F. ALLEN | *Blood:*-ANAEMIA: (59)- 3 ACON, 1 alum, 3 ANT-T, *2 arn*, 3 ARS, *2 bell*, 3 BRY, 3 CALC, 3 CALC-P, *2 carb-v*, *2 cham*, 3 CHIN, *2 cina*, 3 COCH, 1 coff, *2 coloc*, 3 CON, 3 CUPR, 1 cycl, *2 dig*, 3 FERR, 3 GRAPH, *2 hell*, 1 hep, *2 ign*, 1 iod, 3 KALI-C, *2 lac-d*, 1 kreos, 3 LYC, 1 mag-c, 1 mag-m, *2 merc*, 1 mez, 3 MOSCH, *2 nat-c*, 3 NAT-M, 3 NIT-AC, 1 nux-m, 3 NUX-V, 3 PHOS, *2 ph-ac*, 3 PLAT, *2 plb*, 3 PULS, 1 rhod, 3 RHUS-T, 1 ruta, *2 sabin*, 3 SQUIL, 3 SEP, *2 sil*, 1 spig, 1 stann, 3 STAPH, 3 SULPH, *2 valer*, 1 verat, 1 zinc<br>*Blood:*-PALPITATION: ANAEMIA IN: (11)- 1 cycl, 1 dig, 1 eucal, *2 ferr*, 1 hydrin-s, 1 hyper, *2 kali-c*, *2 nat-m*, 1 ph-ac, *2 puls*, 1 senec. |
| COMPLETE REPERTORY BY- ROGER VAN ZANDVOORT | *Generals*-ANEMIA (226)- 1 abel, 1 abies-c, 1 abrot, 1 absin, *2 acet-ac*, 1 acetan, 1 acon, 1 agar, 1 agn, *2 alet*, 1 aloe, 1 alst-s, 1 alum, 1 alum-p, 1 alum-sil, 1 alumn, 1 am-c, 1 ambr, 1 anil, 1 ant-c, *2 ant-t*, *2 apis*, 1 apoc, 1 aq-mar, *2 arg*, *2 arg-n*, *2 arg-o*, *2 arn*, 3 ARS, 1 ars-h, *2 ars-i*, 3 ARS-S-F, 1 aur-ar, 1 bac, 1 bar-c, *2 bell*, 1 benz-d, 1 benz-n, 1 berb, 1 beryl, 1 bism, 1 bol, 3 BOR, 1 bov, *2 bry*, 1 cadm, 3 CALC, 1 calc-ar, 1 calc-i, 1 calc-l, 3 CALC-P, 1 calc-sil, 1 calen, 1 calo, 1 camph-br, 1 cann-i, 1 carb-an, *2 carb-v*, *2 carbn-s*, 1 carc, 1 casc, *2 caust*, 1 cean, 1 cedr, 1 cham, 3 CHIN, 1 chin-ar, *2 chin-s*, 1 chlol, 1 chlor, 1 chloram, 1 cic, 1 cina, 1 cob-n, *2 cocc*, 1 coch, 1 coff, 1 colch, 1 coloc, *2 con*, 1 cortico, 1 cortiso, 1 crat, *2 crot-h*, *2 cupr*, 1 cupr-ar, 1 cupr-s, *2 cycl*, 1 dig, 1 eucal, 3 FERR, 1 ferr-acet, 3 FERR-AR, 1 ferr-br, 1 ferr-c, 1 ferr-cit, *2 ferr-i*, *2 ferr-m*, *2 ferr-p*, 1 ferr-pic, 1 ferr-prox, 1 ferr-s, 1 franz, 1 galeg, 1 goss, 3 GRAPH, *2 ham*, 3 HELL, *2 helon*, 1 hep, *2 hydr*, *2 ign*, 1 iod, 1 ip, *2 irid*, 3 KALI-AR, *2 kali-bi*, *2 kali-br*, *2 kali-c*, 1 kali-chl, 1 kali-fcy, 1 kali-hp, 1 kali-m, 1 kali-ma, 1 kali-n, 3 KALI-P, 1 kali-s, 1 kalm, 1 kres, 1 lac-ac, 1 lac-c, 1 lac-d, *2 lach*, 1 lec, 1 lyc, 1 lyss, 1 mag-c, 1 mag-m, 3 MANG, 3 MED, 3 MERC, *2 merc-c*, 1 merc-k-i, 1 mez, 1 mill, *2 mosch*, 1 nat-ar, 1 nat-br, *2 nat-c*, 1 nat-cac, 1 nat-hchls, 3 NAT-M, 1 nat-n, *2 nat-p*, *2 nat-s*, 1 nat-taur, 3 NIT-AC, 1 nux-m, *2 nux-v*, 1 ol-j, *2 olnd*, 1 ost, 1 oxyg, 1 paull, 1 peti, 1 petr, *2 ph-ac*, 3 PHOS, *2 phyt*, *2 pic-ac*, 1 pitu-a, 3 PLAT, 3 PLB, *2 plb-acet*, 1 psor, 3 PULS, 1 puls-n, 1 rad-br, 1 rhod, *2 rhus-t*, 1 ric, 1 rob, 1 rub-t, 1 ruta, 1 sabin, 1 sac-alb, 1 sac-l, 1 sal-ac, 1 sarr, *2 sec*, *2 senec*, *2 sep*, 1 sil, 1 sin-n, 1 sol-n, 1 spig, 3 SQUIL, *2 stann*, 3 STAPH, 1 stroph, 1 stry-f-c, 3 SUL-AC, 1 sulfa, 1 sulfonam, 3 SULPH, 1 syc-co, 1 tab, 1 ther, 1 thuj, *2 thyr*, 1 trif-r, 1 trinit, 1 tub, 1 tub-sp, 1 urt-u, 1 ust, 1 valer, 1 vanad, 1 verat, *2 x-ray*, 1 xan, 1 zinc, 1 zinc-ar, 1 zinc-m, 1 zinc-p, 1 zinc-s<br>*Generals*-ANEMIA blood, from loss of climacteric period, in (1)- *2 chin*<br>*Generals*-ANEMIA blood, from loss of epistaxis, with (10)- 1 am-c, 1 bry, 1 chin, 1 ferr, 1 ferr-acet, 1 hydr, 1 kali-c, *2 lach*, 1 nat-n, 1 puls<br>*Generals*-ANEMIA blood, from loss of hemorrhage, after (19)- *2 arg-o*, *2 ars*, *2 calc*, *2 carb-v*, 3 CHIN, 1 crot-h, 3 FERR, *2 helon*, 1 hydr, 1 ign, *2 lach*, 1 nat-br, *2 nat-m*, *2 nux-v*, *2 ph-ac*, *2 phos*, 1 sabin, 1 staph, *2 sulph*<br>*Generals*-ANEMIA blood, from loss of metrorrhagia, menorrhagia, menstrual derangements, from (28)- 1 ant-c, 1 arg-o, 1 ars, *2 bac*, 1 calc, 1 calc-p, *2 cann-i*, 1 chin, 1 crat, 1 crot-h, *2 cycl*, 1 ferr, 1 ferr-acet, 1 goss, *2 graph*, 1 ham, 1 helon, *2 hydr*, 1 kali-c, 1 lac-ac, 1 mang, 1 nat-m, 1 phos, *2 puls*, 1 senec, 1 sep, 1 trif-r, 1 xan<br>*Generals*- ANEMIA cerebral (4)-1 camph-br, 1 eucal, 1 kali-br, 1 zinc-p<br>*Generals*-ANEMIA grief, from (2)-1 nat-m, *2 ph-ac*<br>*Generals*-ANEMIA hemolytic malaria, from (5)-1 alst-s, *2 ars*, *2 nat-m*, 1 ost, 1 rob<br>*Generals*-ANEMIA hemolytic splenic (1)-1 rub-t<br>*Generals*-ANEMIA hereditary (1)-1 carc<br>*Generals*-ANEMIA young girls (1)-1 stroph<br>*Generals*-ANEMIA impaired production of red blood cells iron deficiency, from, chlorosis (107)- 1 abies-c, *2 abrot*, *2 absin*, *2 acet-ac*, 1 acetan, *2 alet*, *2 alum*, 1 alum-p, 1 alumn, *2 am-c*, *2 ambr*, *2 ant-c*, *2 ant-t*, 1 aq-mar, *2 arg*, 1 arg-n, 3 ARS, 1 ars-i, 1 ars-s-f, 1 aur-ar, 1 bar-c, 3 BELL, 1 bry, 1 cadm, 3 CALC, 1 calc-ar, 3 CALC-P, 1 carb-an, *2 carb-v*, 3 CARBN-S, 1 caust, *2 chin*, *2 chin-ar*, 1 chlor, 1 cina, 1 cob-n, 3 COCC, 1 coch, *2 con*, *2 cupr*, *2 cycl*, 1 dig, 3 FERR, 3 FERR-AR, *2 ferr-i*, 3 FERR-M, 1 ferr-p, *2 ferr-s*, 1 franz, 3 GRAPH, *2 hell*, *2 helon*, *2 hep*, 1 ign, *2 ip*, *2 kali-ar*, 1 kali-bi, *2 kali-c*, *2 kali-fcy*, 1 kali-ma, *2 kali-p*, 1 kali-s, 1 lac-c, 1 lach, 1 lec, 3 LYC, *2 lyss*, 3 MANG, *2 med*, 1 merc, *2 mill*, *2 nat-c*, 1 nat-hchls, 3 NAT-M, 1 nat-p, 3 NIT-AC, *2 nux-v*, 1 olnd, *2 paull*, 1 peti, *2 petr*, 1 ph-ac, 3 PHOS, 1 phyt, 1 pic-ac, 3 PLAT, *2 plb*, 3 PULS, 1 rub-t, 1 sabin, 1 sac-alb, 1 sac-l, 3 SENEC, 3 SEP, *2 sin-n*, *2 spig*, 1 staph, *2 stry-f-c*, 1 sul-ac, 3 SULPH, 1 thuj, 1 ust, 1 valer, 1 vanad, *2 xan*, 1 zinc, 1 zinc-m<br>*Generals*-ANEMIA impaired production of red blood cells iron deficiency, from, chlorosis alternate days, sym (1)- 1 alum<br>*Generals*- ANEMIA impaired production of red blood cells iron deficiency, from, chlorosis anger, from (1)- *2 nux-v*<br>*Generals*-ANEMIA impaired production of red blood cells iron deficiency, from, chlorosis emotions, from (1)- 1 ign<br>*Generals*- ANEMIA impaired production of red blood cells iron deficiency, from, chlorosis Winter, in (1)- *2 ferr*<br>*Generals*- ANEMIA skin problems, with (1)- 1 kali-m<br>*Generals*- WEAKNESS, enervation, exhaustion, prostration, infirmity anemia, in (7)- 1 bac, *2 chin*, 3 FERR, 3 KALI-C, *2 nat-c*, *2 nat-m*, 3 PHOS |
| BOERICKE'S NEW MANUAL OF HOMOEOPATHIC MATERIA MEDICA WITH REPERTORY BY- WILLIAM BOERICKE | *Generals*- ANEMIA, CHLOROSIS (63)- *2 acet-ac*, 3 ALET, *2 alum*, 3 ARG-N, *2 arn*, 3 ARS, *2 bism*, *2 calc-ar*, 3 CALC, 3 CALC-P, *2 calo*, *2 carb-v*, 3 CHIN, *2 chin-ar*, 3 CHIN-S, *2 cic*, *2 con*, *2 crot-c*, 3 CUPR, *2 cupr-ar*, 3 CYCL, 3 FERR-AR, *2 ferr-acet*, 3 FERR-I, 3 FERR-MA, *2 ferr-m*, *2 ferr-p*, 3 GRAPH, 3 HELON, *2 hydr*, *2 iod*, *2 irid*, *2 kali-bi*, 3 KALI-C, *2 kali-p*, *2 lec*, *2 lyc*, 3 MANG, *2 merc-s*, *2 nat-c*, 3 NAT-M, 3 NIT-AC, *2 nux-v*, *2 petr*, 3 PHOS, *2 phyt*, *2 pic-ac*, *2 plat*, 3 PULS, 3 SEC, 3 SEP, *2 sil*, 3 SULPH, *2 zinc-m*, 3 ARG-O, *2 calc-l*, *2 ferr-red*, *2 ferr-cit*, *2 zinc-ar*, *2 vanad*, *2 crat*, *2 thyr*, *2 goss*<br>*Generals* - ANEMIA, FROM GRIEF (2)-*2 nat-m*, 3 PH-AC<br>*Generals*- ANEMIA, FROM MENSTRUAL DERANGEMENTS (13)- *2 ars*, 3 CALC, *2 calc-p*, 3 CYCL, 3 FERR, 3 GRAPH, 3 KALI-C, *2 mang*, 3 NAT-M, 3 PULS, *2 sep*, *2 arg-o*, *2 crat*<br>*Generals* - ANEMIA, FROM NUTRITIONAL DISTURBANCES (5)-*2 alet*, *2 alum*, 3 CALC-P, *2 ferr*, *2 nux-v*<br>*Generals* - ANEMIA, HEMORRHAGIC CHLOROSIS (6)- 3 ARS, *2 calc*, *2 crot-c*, *2 ign*, 3 ARG-O, *2 nat-br* |
| AUGMENTED CLINICAL SYNTHESIS BY- DR.FREDERIK SCHROYENS | GENERALS – ANEMIA- abel.abies-c.*Acet-ac*.acetan.acon.agar.agn.*Alet*.aloealst-s.alum.alum-p.alum-sil.<br>GENERALS - ANEMIA - accompanied by – abortion- alet.carb-v.ferr.ferr-act.kali-c.kali-n.kali-perm.sec.*Sep*.sulph.<br>GENERALS - ANEMIA - accompanied by - anemic look- calc-p.<br>GENERALS - ANEMIA - accompanied by – constipation alum.alumsil.alumn.chin.cycl.ferr.graph.hydr.kali-c.mang.nat-m.nux-v.plb.puls.sulph.<br>GENERALS - ANEMIA - accompanied by – coryza- bry.chin.ferr.hydr.kali-c.puls.<br>GENERALS - ANEMIA - accompanied by – emaciation- plb.<br>GENERALS - ANEMIA - accompanied by - fever and dizziness; asthenic- ferr.<br>GENERALS - ANEMIA - accompanied by - fever – intermittent- nit-ac.<br>GENERALS - ANEMIA - accompanied by - genital complaints- cycl.<br>GENERALS - ANEMIA - accompanied by - gastrointestinal complaints- cycl.<br>GENERALS - ANEMIA - accompanied by – nervousness-ferr. |

| | |
|---|---|
| | GENERALS - ANEMIA - accompanied by - perspiration; profuse- acet-ac.<br>GENERALS - ANEMIA - accompanied by - pulsation all over the body- kali-c.<br>GENERALS - ANEMIA - accompanied by - respiration; difficult- acet-ac.calc.stroph-h.<br>GENERALS - ANEMIA - accompanied by - urinary complaints- cycl.<br>GENERALS - ANEMIA - accompanied by - urine; copious- acet-ac.<br>GENERALS - ANEMIA - accompanied by – vertigo- alet.carb-v.chin.crot-h.cycl.eucal.ferr.kali-c.led.phos.senec.<br>GENERALS - ANEMIA - accompanied by – vomiting- acet-ac.<br>GENERALS - ANEMIA - accompanied by - Face; red discoloration of- ferr.graph.<br>GENERALS - ANEMIA - accompanied by - Heart; weak- acet-ac.<br>GENERALS - ANEMIA - accompanied by - Mucous membrane; pale- ferr.graph.<br>GENERALS - ANEMIA - children; in- *Calc-p.*med.<br>GENERALS - ANEMIA - corpuscles; from reduced red- plb.<br>GENERALS - ANEMIA - disease; from exhausting- acet-ac.alst.*Calc-p.Chin.*chinin-s.*Ferr.*helon.kali-c.*Nat-m.Ph-ac.Phos.*sec.<br>GENERALS - ANEMIA - followed by - blood; loss of- *Chin.*<br>GENERALS - ANEMIA - girls; in young- alum.tub.<br>GENERALS - ANEMIA - grief; from- nat-m.ph-ac.<br>GENERALS - ANEMIA - heart disease; from- ars.crat.stroph-h.<br>GENERALS - ANEMIA - hemorrhage, after- *Arg-o.Ars.*bit-ar.*Calc.Carb-v.*CHIN.crot-h.FERR.*Helon.*hydr.ign.*Lach.*nat-br.*Nat-m.Nux-v.Ph-ac.Phos.*sabin.staph.*Sulph.*<br>GENERALS - ANEMIA - menorrhagia, from- arg-o.ars.*Calc.*calc-p.*Cann-i.*crat.*Cycl.Ferr.Graph.*helon.*Hydr.Kali-c.*kali-fcy.lyss.mang.*Nat-m.Phos.Puls.*sep.<br>GENERALS - ANEMIA - menses – after- ant-c.calc.chin.ferr.nat-m.<br>GENERALS - ANEMIA - nursing mothers- acet-ac.<br>GENERALS - ANEMIA - nutritional complaints; from- alet.alum.*Calc-p.*ferr.ferr-p.helon.nux-v.<br>GENERALS - ANEMIA - young people; in- ferr. |

**TABLE 3 : Characteristics symptoms of Ferrum phosphoricum related to IDA from different Materia Medica.**

| SR NO | NAME OF BOOK AND AUTHOR | CHARACTERISTICS OF FERRUM PHOSPHORICUM |
|---|---|---|
| 1 | Dr. Schuessler'sBiochemic System of Medicine | Regarded as the oxygen carrier.<br>Ferrum phos plays a role in the creation of energy in the cells.<br>It gives strength and toughness to the circular walls of blood vessels, especially the arteries.<br>Anemia – loss of vitality, after surgery, radiation.<br>Increases oxygen to the lungs and throughout the body. |
| 2 | Pocket Manual of Homoeopathic Materia Medica And Repertory By William Boericke | Anæmic with the false plethora and easy flushing.<br>Ferrum phos. 3x increases hemoglobin. |
| 3 | The Encyclopedia of Pure Materia Medica By Timothy F. Allen, A.M., M.D. | At the time of proving following symptoms were noticed:<br>FACE:After moderate tepid bathing, mostly with sponge, lips look blue (seventh day).<br>MOUTH: Light coat on tongue not unusual, but increased, with a yellowish tint increasing towards the base (eighteenth day). |
| 4 | Concordant Materia Medica, By VermeulenFrans | He stated in his proving that Ferrum phosphoricum is the functional agent for tension of the vesselin great doses it can relax the tension of the vessel and therefore createhyperaemia, in small doses on the other hand the<br>relaxed muscles. |
| 5 | A Dictionary of Practical Materia Medica, By John Henry Clarke, M.D. | Ferrum phos takes corresp-ond to disturbed states of circulation, irritation, and relaxation of tissue.<br>Inflammation, induration and enlargement of blood vessels; great physical and mental lassitude; indisposed to physical exertion; nervousness, prostration. |
| 6 | Lectures on Homœopathic Materia Medica, By James Tyler Kent, A.M., M.D. | Most noticeable features are anaemia and chlorosis,lack of vital heat and false plethora. |
| 7 | Physiological Materia Medica By W.H. Burt | Iron has a specific action upon the blood , producing a decrease of the albumin and an increase of water in the serum at the same time diminishing R.B.C. |

## RESULTS

### Search results

We retrieved 31 studies from the different databases and internet site searches. After manually removing 08 duplicate studies. Seven reviewers independently screened 23 articles out of which 18 studies were excluded & 05 studies were included in current review by applying selection criteria (Figure 1). The primary reasons for excluding studies were as follows: only abstract articles, in vivo & vitro studies, IDA with other clinical articles in other languages & not original studies. Ultimately, two randomized studies & three non-randomized studies were included in the current review.

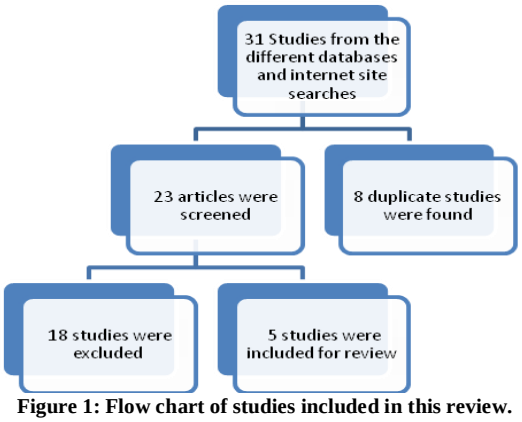


**Figure 1: Flow chart of studies included in this review.**

**Study characteristics:**

Participants

In present review 2 studies were on randomized control trials out of which one study was on antenatal care between second & third trimester which were diagnosed as mild to moderate anemia( Hb%= 7- 10 gm%) & another study participants were adolescents girls age group between 10-18 years with (Hb% = <12gm%) were included. 03 studies were non randomized out of which participants in one study recruited were adolescent age group between 17-20 years & diagnosis was done on the basis of Hb%, Iron level & symptoms of IDA. Second study were conducted on adult age group between 14-60 years included in study after assessing (Hb = 9-11gm%, MCV, MCH, MCHC, Peripheral smear). In third study participants were enrolled only of pediatric age group between 5-14 years by assessing (Hb%=5-11 gm%), clinical history & examination.

**Methodological assessment**

Assessment was done by using Modified Methodological Quality Checklist developed by Down and Black, 1998 by summarizing methodological characteristics of all included studies. Modified Methodological Quality Checklist of Downs & Black final score on the quality of 05 included studies ranged from 0 to 9 which includes 2 RCT & 3 Non RCT studies. Scores for each of the five factors devised which varied from 0 to 9 for quality of reporting (maximum score = 11), 0 to 3 for external validity (maximum score = 3), 0 to 5 for internal validity bias (maximum score = 8), 0 to 3 for internal validity confounding (maximum score = 6) and all studies received a 0 for power calculation (maximum score = 1).

**Table 4.Modified Downs & Black Checklist Score**

| Scoring | RCT 1 | RCT2 | Non RCT 1 | Non RCT 2 | Non RCT 3 | Total |
|---|---|---|---|---|---|---|
| from Q.1-10for quality of reporting (maximum score = 11) | 9 | 7 | 9 | 7 | 6 | 38 |
| Q.11 to 13 for external validity (maximum score = 3), | 3 | 3 | 1 | 1 | 2 | 10 |
| Q.14-20internal validity bias (maximum score = 8) | 6 | 4 | 4 | 2 | 5 | 21 |
| Q21-26for internal validity confounding (maximum score = 6) | 3 | 2 | 3 | 2 | 2 | 12 |
| Q.27. power maximum score 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 21 | 16 | 17 | 12 | 15 | 81 |

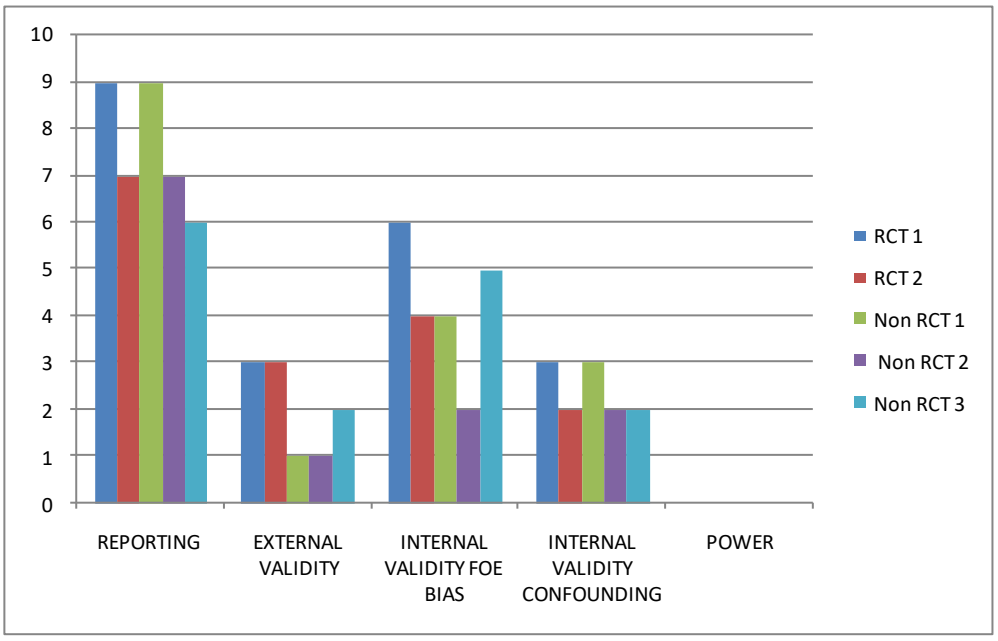


**Figure 2. Risk of bias assessment based on Modified Downs & Black Checklist**

## DISCUSSION

After searching so many databases total 31 researches were found. Out of which only 05 studies were included in present review. Methodological quality of the included trials was assessed by using modified down and black checklists.

The two randomized controlled trials showed the effectiveness of Ferrum phosphoricum in iron deficiency anaemia where one of the study showed that Ferrum Phosphoricum 6X decreases the risk of iron deficiency anaemia in second & third trimester during pregnancy & sustain the Hb levels throughout the pregnancy without causing any adverse effects. Second study was conducted on adolescence girls revealed that constitutional medicine along with Ferrum phosphoricum has capacity to increase Hb level in Iron deficiency anaemia. This review also included three non RCT suggesting that the effectiveness of a standardized homoeopathic medicine Ferrum phosphoricum is capable of improving the Hb levels in iron deficiency anaemia. Insufficient data is available on Ferrum phosphoricum in IDA, so further studies are required to see the effectiveness of Ferrum Phosphoricum.

## CONCLUSION

The result indicates that there was increase in haemoglobin levels in cases of IDA patients. Therefore it can be concluded that the homoeopathic medicine Ferrum phosphoricum may have beneficial effect in improving the Hb level in IDA patients. Therefore it is a good choice as specific remedy for IDA. Since limited researches have been done on present topic which requires further researches.

## ACKNOWLEDGEMENT

Asst. Prof. Dr. Tejas P. Gosawi M.D. (Hom.) Bharati Vidyapeeth Deemed to be University Homoeopathic Medical College & Hospital, Pune, India.

**Conflict Of Interest**

The authors declare that they have no conflict of interests.

## REFERENCES

- Kumari R, Bharti RK, Singh K, Sinha A, Kumar S, Saran A, Kumar U. Prevalence of Iron Deficiency and Iron Deficiency Anaemia in Adolescent Girls in a Tertiary Care Hospital. Journal of clinical and diagnostic research: JCDR. 2017 Aug;11(8):BC04.
- Durai R. Prevalence of Anaemia in Tertiary Care Hospital. World Journal of Pharmaceutical Sciences [Internet]. 2018 [cited 30 September 2018];(2321-3086):04. Available from: http://www.wjpsonline.org/
- Selvaraj K, Arumugasamy P, Sarkar S. Compliance and patterns of iron-folic acid intake among adolescent girls and antenatal women in rural Tamil Nadu. Chrismed Journal of Health and Research. 2017 Apr 1;4(2):87.
- Tamboli P, Broker D, Goda C, Sayyad M. Efficacy of Ferrum Phosphoricum 6X in Iron Deficiency Anemia During Antenental Care in Rural Population of Vikramgragh Taluka in Single Blind Randomized Placebo Control Trial: A Pilot Study.
- Munjal YP, Sharm SK. API Textbook of Medicine, Two Volume Set. JP Medical Ltd; 2012 May 18.
- Downs SH, Black N. The feasibility of creating a checklist for the assessment of the methodological quality both of randomised and non-randomised studies of health care interventions. Journal of Epidemiology & Community Health. 1998 Jun 1;52(6):377-84.
- Jadhav AB, Arya MP. Research Article Investigation to Study the Efficacy of Ferrum Phos 3x Alone and Along with Homeopathic Constitutional Medicines on Hemoglobin Level in Adolescence Girls AS Patil Bharati Vidyapeeth Homeopathic Medical College, Bharati Vidyapeeth Deemed University, Pune, 43, India.
- Aphale, P. (2017). To Study The Efficacy Of Ferrum Phos In Management Of Iron Deficiency Anemia. *International Journal of Research in Drug & Pharmaceutical Science (IJRDPS)*, [online] 1(1), p.4. Available at: https://ijournals.in/ijrdps-volume-1-issue-1/ [Accessed 1 Jun. 2017].
- Gundimi M. The impact of homoeopathic remedies on clinical pattern and the haematological changes of iron deficiency

anaemia in adult age group [Postgraduate]. Father Muller Homoeopathic Medical College, Mangalore; 2012.
- Nandamudi CS. Study of highlight the efficacy of homeopathy in the treatment of iron deficiency anemia in pediatric age group (Doctoral dissertation).
- Murphy R. Homoeopathic Medical Repertory (Iind Ed.). B. Jain Publishers; 1998.
- Boger CM. A Synoptic Key of the Materia Medica, New Dehli.
- Phatak SR. Concise Repertory of Homoeopathic Medicines. B. Jain Publishers; 2004.
- Clarke JH. Clinical Repertory. B. Jain Publishers; 1994.
- Boger CM, von Boenninghausen C. Boenninghausen's Characteristics and Repertory. B. Jain Publishers Pvt. Limited; 1988.
- Allen TF, von vonBönninghausen CM. Boenninghausen's Therapeutic Pocket Book. B. Jain Publishers; 1994.
- Van Roger Z. The Complete Repertory, 1998 Reprint edition. Institute for Research on Homoeopathic Information and Symptomatology.
- Boericke W. Boericke's New Manual of Homoeopathic Materia Medica with Repertory. 3 rd Revised and Augmented Edition Based on 9th ed. New Delhi: B.
- Katz T. Synthesis-Repertorium Homoeopathicum Syntheticum. Edited by FrederikSchroyens. London: Homoeopathic Book Publishers. ISBN 0982274493. l129.
- Carey GW. The Biochemic System of Medicine: Comprising the Theory, Pathological Action, Therapeutical Application, Materia Medica, and Repertory of Schuessler's Twelve Tissue Remedies. FA Luyties; 1894.
- William B. Pocket Manual of Homoeopathic Materia Medica. In: 1981. B. Jain Publishers.
- Allen TF. The Encyclopedia of pure materiamedica. Boericke&Tafel; 1878.
- Vermeulen F. Concordant Materia Medica: Boericke, Phatak, Boger, Lippe, Allen, Pulford, Cowperthwaite, Kent, Clarke, Vermeulen. Merlijn Publ.; 1994.
- Clarke JH. A dictionary of pratical materia medica. homoeopathic publishing Company; 1902.
- Kent JT. Lectures on homoeopathic material medica. Jain Publishing Company; 1980.
- Burt WH. Physiological Materia Medica, B.
- Nareddy VA, Varun MS, Nagabushana MV. Incidence of iron deficiency anaemia and it's early detection in patients with hypoproliferative anaemia presentation in a tertiary care hospital. International Journal of Advances in Medicine.2018 Jun 23.

How to cite this article: Jadhav SS, Tiwari P, Lata K et.al. Iron deficiency anaemia & *Ferrum phosphoricum*: a systematic review. International Journal of Research and Review. 2019; 6(2):83-91.

******