Chlorpromazine

NOT RECOMMENDED AS AN ESSENTIAL MEDICINE

Section: 24. Medicines for mental and behavioural disorders > 24.1. Medicines for psychotic disorders

EMLc ATC codes: N05AA01

Indication	Schizophrenia or other primary psychotic disorders ICD11 code: 6A2Z
INN	Chlorpromazine
Medicine type	Chemical agent
List type	Core (EML) Complementary (EMLc)
Formulations	**Oral > Liquid:** 25 mg per 5 mL (hydrochloride) **Oral > Solid:** 100 mg (hydrochloride) ; 10 mg (hydrochloride) (EMLc) ; 25 mg (hydrochloride) (EMLc) ; 50 mg (hydrochloride) (EMLc) **Parenteral > General injections > unspecified:** 25 mg per mL in 2 mL ampoule (hydrochloride)
EML status history	First added in 1977 (TRS 615) Changed in 1979 (TRS 641) Changed in 2007 (TRS 950) Changed in 2009 (TRS 958) Changed in 2013 (TRS 985) Changed in 2021 (TRS 1035) Removed in 2023 (TRS 1049)
Sex	All
Age	Also recommended for children
Therapeutic alternatives	Medicines within the same pharmacological class can be used
Therapeutic alternatives limitations	Therapeutic alternatives to be reviewed (2023)
Therapeutic alternatives limitations for EMLc	The square box does not apply for the listing of chlorpromazine on the EMLc
Patent information	Patents have expired in most jurisdictions Read more about patents.
Wikipedia	Chlorpromazine
DrugBank	Chlorpromazine

Expert Committee recommendation

1. Application for deletion of chlorpromazine and haloperidol from the EMLc for the treatment of psychotic disorders in children. The Expert Committee recommended the deletion of chlorpromazine and haloperidol (all dosage forms) from the complementary list of the EMLc. The Committee noted that schizophrenia and other chronic psychotic disorders were rare in children younger than 12 years. The Committee agreed that the available evidence for these medicines in the treatment of psychoses in children was inconclusive and insufficient to support their ongoing inclusion on the EMLc. ======= 2. Application for deletion of chlorpromazine intramuscular

injection for treatment of adults with schizophrenia and related psychotic disorders from the core list of the EML and addition of olanzapine intramuscular injection to the core list of the EML for the acute treatment of adults with schizophrenia spectrum disorders. The Expert Committee noted that injectable, intramuscular immediate-release formulations of antipsychotic medicines were relevant for the management of people with schizophrenia and related psychotic disorders, especially for short-term treatment of acute psychomotor agitation when treatment cannot be administered orally. The Committee noted that the most updated and high-quality scientific literature showed that evidence supporting chlorpromazine injection was quantitatively and qualitatively poor (no evidence against placebo, and low/very low-certainty evidence against haloperidol injection). The Committee also noted that chlorpromazine injection may be associated with an increased risk of adverse effects and was not included in current WHO guidelines. The Committee noted that the evidence presented in the application showed injectable haloperidol, olanzapine and aripiprazole had similar efficacy profiles, but that olanzapine and aripiprazole generally had a more tolerable safety profile in terms of motor symptoms (including acute dystonia and other extrapyramidal symptoms) than injectable haloperidol. The Committee noted that olanzapine was available in generic forms in many countries, while generic forms of aripiprazole were currently not available. Based on these considerations, the Expert Committee recommended the removal of chlorpromazine immediate-release injection from the core list of the EML. The Committee also recommended the addition of olanzapine immediate-release injection on the core list of the EML for treatment of adults with schizophrenia and related psychotic disorders. ======= 3. Application to review the therapeutic alternatives under the square box listings for chlorpromazine, fluphenazine and haloperidol on the EML for use in the treatment of schizophrenia and related psychotic disorders. The Expert Committee recalled the request made by the 2021 Committee for therapeutic alternatives to be reviewed for the square box listings for chlorpromazine, fluphenazine and haloperidol for treatment of schizophrenia and related psychotic disorders. The Expert Committee accepted the rationale applied by the WHO Department of Mental Health and Substance Use in identifying suitable therapeutic alternatives and made the following recommendations. For immediate-acting first-generation antipsychotics, chlorpromazine (oral formulations only) should be included as a therapeutic alternative to oral haloperidol. This recommendation, coupled with the recommendation to remove chlorpromazine injection, effectively removes the independent listing for chlorpromazine from the EML. For long-acting first-generation antipsychotics, haloperidol decanoate and zuclopenthixol decanoate should be included as therapeutic alternatives to fluphenazine.

Background

1. Application for deletion of chlorpromazine and haloperidol from the EMLc for the treatment of psychotic disorders in children. Chlorpromazine and haloperidol have been included in the EMLc for treatment of psychotic disorders in children since the first list was published in 2007. In 2013, a request for deletion of these medicines was made by the WHO Department of Mental Health and Substance Use. The Expert Committee recognized that the indications for use for chlorpromazine and haloperidol were very rare in children and that adverse events from these medicines may be more frequent in children than in adults. However, the Committee recognized the importance of ensuring that treatment was available for severe psychiatric disorders in children and noted that the application did not fully review all treatment options. The Committee therefore requested a review of the evidence for the benefits and risks of each medicine in the paediatric population and decided to make no changes to the list until such reviews had been considered (1). ======= 2. Application for deletion of chlorpromazine intramuscular injection for treatment of adults with schizophrenia and related psychotic disorders from the core list of the EML and addition of olanzapine intramuscular injection to the core list of the EML for the acute treatment of adults with schizophrenia spectrum disorders. Chlorpromazine, with a square box, has been included on the EML since the first list was published in 1977. Listed formulations include the injection being proposed for removal, as well as oral liquid and tablets. Haloperidol is the only other immediate-release injectable antipsychotic currently included on the EML. In 2021, as part of a comprehensive review of square box listings on the EML and EMLc, the Expert Committee requested that the therapeutic alternatives for chlorpromazine under the square box listing be reviewed. In addition to the current application, a separate application considered at the 2023 Expert Committee meeting provided a review of therapeutic alternatives among first-generation antipsychotics. ======= 3. Application to review the therapeutic alternatives under the square box listings for chlorpromazine,

fluphenazine and haloperidol on the EML for use in the treatment of schizophrenia and related psychotic disorders. Chlorpromazine, fluphenazine and haloperidol have all been included on the EML for use in the treatment of schizophrenia and related psychotic disorders since the first EML was published in 1977. At its meeting in 2021, the Expert Committee considered a review of square box listings on the EML and EMLc and recommended that all square box listings be qualified to explicitly indicate the recommended therapeutic alternatives. The Committee requested that the therapeutic alternatives for chlorpromazine, fluphenazine and haloperidol be reviewed and updated in 2023 (1). Thus, the EML Secretariat invited the WHO Department of Mental Health and Substance Use to submit an application reviewing the therapeutic alternatives for these medicines. In a separate application to the 2023 Expert Committee meeting, the WHO Collaborating Centre for Research and Training in Mental Health and Service Evaluation at the University of Verona, Italy, proposed the deletion of chlorpromazine intramuscular injection from the EML.

Public health relevance

1. Application for deletion of chlorpromazine and haloperidol from the EMLc for the treatment of psychotic disorders in children. Psychotic disorders are very rare in childhood. The prevalence of the onset of psychotic symptoms before 13 years of age has been estimated to be 100 times lower than the adult form of the disorder (2). Due to the scarcity of definitive epidemiological studies, the true prevalence is likely to be even less (3,4). Two studies investigating rates of childhood neuropsychiatric disorders in Sweden and North Dakota (United States) found the prevalence of childhood-onset schizophrenia to be 1.6 per 100 000 children and 1.9 per 100 000 children, respectively (5–7). The largest study on childhood-onset schizophrenia to date, involving 1400 national referrals to the United States National Institute of Mental Health over 10 years, identified 260 children with psychosis of whom only 71 met the criteria for childhood-onset schizophrenia at study entry (8). Beyond schizophrenia, psychotic symptoms often represent an ancillary manifestation of other psychiatric conditions (e.g. major depression, bipolar disorder or psychosis not otherwise specified). A study comprising all types of psychiatric and child-guidance services in three large clinics in Germany subdivided childhood psychoses into four diagnostic groups: schizophreniform disorder, affective psychosis, typical non-schizophrenic child and adolescent psychosis and atypical psychosis. The analysis of the distribution of age at onset defined by age at first contact for the four diagnostic categories until the age of 15–18 years showed that first contacts for schizophrenia, affective psychoses or unspecified psychoses become visible in the age group of 12–15 years, followed by a steep increase in the next age group (9). Major depression may occur in 1% of children (10,11), whereas bipolar disorder occurs in 1% to 2% of adolescents (12,13). Mood disorders with psychosis are considerably rarer in children. The prevalence of psychosis not otherwise specified and bipolar disorder in children is hard to ascertain because of controversy about validity. More generally, transitory psychotic experiences may be triggered by various psychiatric conditions. Finally, psychotic symptoms have been associated with, or are secondary to, a wide variety of medical disorders. Studies on adults show that about 3% of new-onset presentations of psychosis can be attributed to a medical condition (14). Therefore, before making a diagnosis of a primary psychotic disorder, secondary causes should be ruled out or, if necessary, adequately treated. Subclinical psychotic experiences may be more common and are usually benign, as in 75–90% of cases they spontaneously remit over time (13). ======= 2. Application for deletion of chlorpromazine intramuscular injection for treatment of adults with schizophrenia and related psychotic disorders from the core list of the EML and addition of olanzapine intramuscular injection to the core list of the EML for the acute treatment of adults with schizophrenia spectrum disorders. About 24 million people in the world are estimated have schizophrenia (1). The prevalence of schizophrenia ranges from 0.2% to 0.4% across countries, while its incidence is reported to be 18.7 per 100 000 person-years (2). Globally, 129 million disability-adjusted life-years are attributable to mental health disorders, 11.7% of which are attributable specifically to schizophrenia spectrum disorders. Schizophrenia is also associated with direct and indirect health care costs, and it is considered the costliest mental health condition per person globally (1,3). Acute psychomotor agitation is a multifactorial clinical manifestation that can occur in a broad spectrum of psychiatric and neurological syndromes. Although data on the epidemiology of acute agitation are lacking, up to 20% of psychiatric emergency visits in the United States might involve agitated individuals with schizophrenia (4). Other studies report an overall prevalence of between 4% and 10% in emergency settings (5).

In psychiatric inpatient settings, a literature review estimated an overall incidence of episodes of violence of about 32% (6). Acute agitation might include heterogeneous manifestations, including highly disorganized behaviours, verbal or physical hostility and overt aggressiveness towards oneself, objects or other individuals. Paranoid delusional thoughts, hallucinations and substance abuse or withdrawal, along with social and environmental triggers, are among the most common underlying cause of acute agitation in people with chronic psychoses (5). Although non-pharmacological management can be effective in many cases, more invasive or coercive measures are sometimes required, particularly when: the insight of disease is poor; there is immediate risk to personal safety; and effective environmental measures cannot be promptly applied. ======= 3. Application to review the therapeutic alternatives under the square box listings for chlorpromazine, fluphenazine and haloperidol on the EML for use in the treatment of schizophrenia and related psychotic disorders. About 24 million people in the world are estimated to have schizophrenia (2). The prevalence of schizophrenia ranges from 0.2% to 0.4% across countries, while its incidence is reported to be 18.7 per 100 000 person-years (3). Globally, 129 million disability-adjusted life-years are attributable to mental health disorders, 11.7% of which are attributable specifically to schizophrenia spectrum disorders. Schizophrenia is also associated with relevant direct and indirect healthcare costs, and it is considered the costliest mental health condition per person globally (2,4). People with schizophrenia have a life expectancy about 14 years lower than the general population (5).

Benefits

1. Application for deletion of chlorpromazine and haloperidol from the EMLc for the treatment of psychotic disorders in children. The application presented the results of a comprehensive literature search for systematic reviews on the efficacy, acceptability and tolerability of antipsychotic medicines in children with schizophrenia and related psychoses. No systematic reviews were found on the efficacy of antipsychotics specifically focused on children aged 12 years or younger. Existing reviews included a mixed population of children and adolescents, largely composed of individuals between 14 and 18 years of age. Eleven systematic reviews were included (15–25), from which data from five randomized controlled trials (four for haloperidol and one for chlorpromazine) were extracted and reanalysed using standard Cochrane methodology. Data from a further three randomized controlled trials involving second-generation antipsychotics were also extracted and reanalysed (26–28). Of note, the data reviewed accounted only for oral administration of haloperidol, chlorpromazine or other antipsychotics; no evidence from randomized controlled trials was available on the efficacy of these compounds administered by intramuscular injection. The findings from trials of chlorpromazine and haloperidol are described below. For second-generation antipsychotics, as no trials have been conducted versus placebo, no information is available on the potentially beneficial role of these medications in children. Chlorpromazine A single randomized controlled trial (60 participants) evaluated the efficacy of chlorpromazine in comparison with risperidone in children and adolescents aged 7 to 16 years with a diagnosis of childhood-onset schizophrenia (29). Psychotic symptomatology at 8 weeks was evaluated using the Brief Psychiatric Rating Scale. Results showed a trend favouring risperidone over chlorpromazine (mean difference (MD) 1.80, 95% confidence interval (CI) –1.14 to 4.74). The Grading of Recommendations, Assessment, Development, and Evaluations (GRADE) certainty of evidence was judged to be very low. Haloperidol A single placebo-controlled randomized controlled trial of haloperidol in children with schizophrenia (12 participants) was not included in the meta-analysis because it had a crossover design and the results before crossing over were not available (30). Two double-blind randomized controlled trials (90 participants) compared haloperidol with fluphenazine in children with schizophrenia (31,32). Pooling the two studies for the outcome “showing moderate or marked improvement” at study endpoint showed a non-significant trend favouring fluphenazine (risk ratio (RR) 0.91, 95% CI 0.72 to 1.14). One double-blind randomized controlled trial (42 participants) compared haloperidol with risperidone in children with childhood-onset schizophrenia (33). For the outcome of psychotic symptomatology at 6 weeks as measured by the Brief Psychiatric Rating Scale, no significant difference was seen between treatments (MD 1.39, 95% CI –0.93 to 3.71). ======= 2. Application for deletion of chlorpromazine intramuscular injection for treatment of adults with schizophrenia and related psychotic disorders from the core list of the EML and addition of olanzapine intramuscular injection to the core list of the EML for the acute treatment of adults with schizophrenia spectrum disorders. Chlorpromazine A 2017 Cochrane systematic review and pairwise meta-analysis included four randomized controlled trials that compared

injectable chlorpromazine and injectable haloperidol for rapid tranquilization in adults with psychosis-induced aggression or agitation (7). These trials provided heterogeneous measures of efficacy and could not be all pooled for any efficacy outcomes. Although a number of outcomes were reported in the meta-analysis, the applicants selected only those pooling at least two randomized controlled trials. For the outcome “not marked improvement”, no significant differences were found between injectable haloperidol and chlorpromazine, although the point estimate favoured haloperidol (risk ratio (RR) 0.79, 95% confidence interval (CI) 0.61 to 1.02; two randomized controlled trials, 89 participants, very low-certainty evidence). Results for the outcome “not any improvement” significantly favoured haloperidol (RR 0.15, 95% CI 0.05 to 0.49; two randomized controlled trials, 89 participants, very low-certainty evidence). Olanzapine A systematic review and network meta-analysis of 10 randomized controlled trials (1964 participants) compared short-acting intramuscular second-generation antipsychotics (aripiprazole, olanzapine and ziprasidone), haloperidol and placebo in acutely agitated individuals with schizophrenia spectrum disorders (8). For the primary outcome of response 2 hours after the injection, all included second-generation antipsychotics were found to significantly outperform placebo, while no significant differences emerged in comparison with intramuscular haloperidol. Olanzapine was significantly more effective than aripiprazole for reducing agitation at 2 hours (RR 1.24, 95% CI 1.05 to 1.45; low-certainty evidence), but not haloperidol (RR 1.13, 95% CI 0.99 to 1.28; low-certainty evidence) or ziprasidone (RR 1.26, 95% CI 0.76 to 2.09; very low-certainty evidence). For the outcome of treatment response at 24 hours, no significant differences were found between olanzapine and haloperidol or olanzapine and aripiprazole. ======= 3. Application to review the therapeutic alternatives under the square box listings for chlorpromazine, fluphenazine and haloperidol on the EML for use in the treatment of schizophrenia and related psychotic disorders. The application stated that according to the most recent and high-quality meta-analysis evidence on both acute and maintenance treatment of schizophrenia spectrum disorders, differences exist between first-generation antipsychotics in terms of efficacy, tolerability and certainty of evidence. The applicants examined two recent meta-analyses: a 2019 systematic review and network meta-analysis (402 randomized controlled trials, 53 463 participants) which evaluated the comparative efficacy and tolerability of 32 oral antipsychotics for acute treatment of adults with schizophrenia (6); and a 2022 systematic review and meta-analysis (537 randomized controlled trials, 76 382 participants) which investigated the response of subgroups of patients with schizophrenia to different antipsychotic medicines (7). The evidence for first-generation antipsychotics was reviewed according to the following criteria. • Demonstration of better efficacy in comparison with placebo for acute and/or maintenance treatment, considering the effect size as clinically meaningful when the confidence interval included a standardized mean difference of ≥ 0.3 for continuous outcomes, or a risk ratio of ≤ 0.6 for dichotomous outcomes. • A moderate to high certainty of evidence according to grading of recommendations, assessment, development, and evaluations (GRADE)/confidence in network meta-analysis (CINeMA) approach for acute or maintenance treatment, or both. The first-generation antipsychotics identified as meeting the above criteria were oral chlorpromazine, immediate-acting haloperidol, long-acting haloperidol decanoate, fluphenazine enantate/decanoate and zuclopenthixol decanoate. When compared head-to-head with the first-generation antipsychotics already listed in the EML, no statistically significant differences were found.

Harms

1. Application for deletion of chlorpromazine and haloperidol from the EMLc for the treatment of psychotic disorders in children. Chlorpromazine From the randomized controlled trial of chlorpromazine versus risperidone, there was very low-certainty evidence of no difference between treatment arms in extrapyramidal symptoms (RR 2.0, 95% CI 0.2 to 20.9), drowsiness (RR 11.0, 95% CI 0.64 to 190.53) or anticholinergic effects (RR 2.0, 95% CI 0.40 to 10.11). No data were available for the outcomes of drop-outs for any reason or drop-outs due to adverse events (29). Haloperidol From the randomized controlled trials involving haloperidol (31–33), there was very low-certainty evidence of no differences between haloperidol and other antipsychotics overall for any side-effects (RR 1.39, 95% CI 0.61 to 3.15; two randomized controlled trials, 72 participants). In one study (42 participants), there was very low-certainty evidence that haloperidol caused fewer side-effects than risperidone (RR 2.05, 95% CI 1.32 to 3.19). There was very low-certainty evidence of a trend favouring haloperidol over other antipsychotics overall for extrapyramidal symptoms (RR 1.82, 95% CI 0.33 to 10.06; three randomized controlled trials, 132

participants). There was very low-certainty evidence that haloperidol caused significantly more extrapyramidal side-effects than risperidone (RR 8.60, 95% CI 2.67 to 27.68; one randomized controlled trial, 42 participants). For weight gain, there was very low-certainty evidence of no difference between haloperidol and fluphenazine (RR 1.17, 95% CI 0.88 to 1.55; one randomized controlled trial, 30 participants). There was very low-certainty evidence that haloperidol caused significantly more drowsiness than risperidone (RR 6.50, 95% CI 1.67 to 25.33; one randomized controlled trial, 42 participants), and of no difference between treatment arms for anticholinergic side-effects (RR 7.00, 95% CI 0.38 to 127.69; one randomized controlled trial, 42 participants) (33). First-generation antipsychotics are associated with extrapyramidal side-effects (dystonia, tardive dyskinesia and parkinsonian symptoms), hyperprolactinaemia and neuroleptic malignant syndrome. Evidence indicates that side-effects may be more severe in children than in adults (34–36). No safety data are available in children exposed to long-term use of antipsychotics. ======= 2. Application for deletion of chlorpromazine intramuscular injection for treatment of adults with schizophrenia and related psychotic disorders from the core list of the EML and addition of olanzapine intramuscular injection to the core list of the EML for the acute treatment of adults with schizophrenia spectrum disorders. Chlorpromazine A meta-analysis of four randomized controlled trials (153 participants) compared injectable haloperidol and injectable chlorpromazine for acceptability outcome “leaving the study early”. The analysis found very low-quality evidence of significant benefit in favour of haloperidol (RR 0.21, 95% CI 0.07 to 0.71). Analysis of adverse events generally found no difference between treatments (7). A revision of psychotropic medicines included in the interagency emergency health kit was conducted in 2011 (9). Injectable chlorpromazine was removed from the kit and was replaced by injectable haloperidol based on concerns of the risk of cardiovascular side-effects with chlorpromazine and its local irritation when administered intramuscularly (10). Olanzapine A systematic review and pairwise meta-analysis of randomized controlled trials compared side-effects of intramuscular olanzapine with those of any other antipsychotic or placebo for treatment of acute agitation in people with schizophrenia spectrum disorders (11). Compared with placebo, there was very low-certainty evidence of no significant difference for intramuscular olanzapine in terms of serious adverse events (RR 0.48, 95% CI 0.05 to 5.18) or other specified adverse events with the exception of QT prolongation, which significantly favoured placebo (RR 0.34, 95% CI 0.16 to 0.70). Compared with haloperidol, no significant differences were found with olanzapine for study discontinuation for any reason (RR 1.02, 95% CI 0.47 to 2.23) or other specified undesirable outcomes with the exception of the use of anticholinergic medicines, extrapyramidal effects and dystonia, for which results favoured olanzapine. ======= 3. Application to review the therapeutic alternatives under the square box listings for chlorpromazine, fluphenazine and haloperidol on the EML for use in the treatment of schizophrenia and related psychotic disorders. Different side-effect profiles of the different first-generation antipsychotics were observed, although tolerability outcomes were rarely reported and were likely imprecise. In general, chlorpromazine had a higher risk of weight gain and anticholinergic effects compared with haloperidol, however haloperidol was associated with higher risks of extrapyramidal symptoms, akathisia and hyperprolactinaemia than chlorpromazine.

Cost / cost effectiveness

1. Application for deletion of chlorpromazine and haloperidol from the EMLc for the treatment of psychotic disorders in children. No cost–effectiveness analyses are available for antipsychotics in children with psychosis. Chlorpromazine and haloperidol are available as generics, mostly at low purchase prices. ======= 2. Application for deletion of chlorpromazine intramuscular injection for treatment of adults with schizophrenia and related psychotic disorders from the core list of the EML and addition of olanzapine intramuscular injection to the core list of the EML for the acute treatment of adults with schizophrenia spectrum disorders. A 2022 cost–effectiveness analysis using data from a randomized clinical trial in Hong Kong between December 2014 and September 2019 compared the costs associated with intramuscular midazolam, haloperidol and olanzapine for the management of acute agitation in an emergency department (13). The main cost driver was labour costs for agitation management; the cost of the medicine was a minor contributor to total expenditure. Midazolam was the most cost–effective intervention, while no difference was found between haloperidol and olanzapine. A 2009 retrospective study compared the medical records of 27 patients who received intramuscular haloperidol for the treatment of acute agitation episodes with those of 26 patients who received intramuscular olanzapine (14). No

differences were found between the two treatments for mean number of repeated medication doses per episode of agitation and the proportion of patients requiring the use of seclusion and restraints. The authors concluded that, with equal effectiveness, haloperidol was the less expensive option. In a 2011 retrospective cohort study based on a review of electronic medical records, 136 patients with a diagnosis of schizophrenia or schizoaffective disorder treated with different short-acting intramuscular antipsychotics (haloperidol, aripiprazole, olanzapine and ziprasidone) were compared for duration of hospital stay, number of injections received and associated costs (15). No difference in the length of hospitalization was found between the group of patients treated with haloperidol and those treated with second-generation antipsychotics. Treatment with haloperidol was associated with a significant reduction in the number of required injections and with lower costs compared to second-generation antipsychotics. Among the second-generation antipsychotics, ziprasidone was associated with a shorter duration of hospital stay compared with olanzapine. The costs of chlorpromazine, haloperidol, olanzapine and aripiprazole intramuscular injections in different countries presented in the application are shown in Table 29 (refer TRS 1049). ======= 3. Application to review the therapeutic alternatives under the square box listings for chlorpromazine, fluphenazine and haloperidol on the EML for use in the treatment of schizophrenia and related psychotic disorders. Not applicable.

WHO guidelines

1. Application for deletion of chlorpromazine and haloperidol from the EMLc for the treatment of psychotic disorders in children. The 2023 WHO Mental Health Gap Action Programme (mhGAP) guideline for mental, neurological and substance use disorders do not include any treatment recommendations for psychotic disorders in children (37). Similarly, other national and international guidelines do not include specific treatment recommendations for children, with most referring only to the adolescent population. ======= 2. Application for deletion of chlorpromazine intramuscular injection for treatment of adults with schizophrenia and related psychotic disorders from the core list of the EML and addition of olanzapine intramuscular injection to the core list of the EML for the acute treatment of adults with schizophrenia spectrum disorders. The proposed deletion of chlorpromazine intramuscular injection and inclusion of olanzapine intramuscular injection are aligned with recommendations in the 2023 WHO Mental Health Gap Action Programme (mhGAP) guidelines (12). ======= 3. Application to review the therapeutic alternatives under the square box listings for chlorpromazine, fluphenazine and haloperidol on the EML for use in the treatment of schizophrenia and related psychotic disorders. The medicines proposed in the application are recommended in the 2023 WHO Mental Health Gap Action Programme (mhGAP) guidelines (8).

Availability

1. Application for deletion of chlorpromazine and haloperidol from the EMLc for the treatment of psychotic disorders in children. Chlorpromazine and haloperidol are available globally, however specific data on availability are not considered relevant for the proposal to delete them from the EMLc. ======= 2. Application for deletion of chlorpromazine intramuscular injection for treatment of adults with schizophrenia and related psychotic disorders from the core list of the EML and addition of olanzapine intramuscular injection to the core list of the EML for the acute treatment of adults with schizophrenia spectrum disorders. Olanzapine intramuscular injection is available globally in branded and generic forms. ======= 3. Application to review the therapeutic alternatives under the square box listings for chlorpromazine, fluphenazine and haloperidol on the EML for use in the treatment of schizophrenia and related psychotic disorders. The proposed medicines are available in branded and generic forms.

Other considerations

3. Application to review the therapeutic alternatives under the square box listings for chlorpromazine, fluphenazine and haloperidol on the EML for use in the treatment of schizophrenia and related psychotic disorders. In consideration of a separate application at the meeting, the Expert Committee recommended the deletion of chlorpromazine immediate-release injection from the core list of the EML.

1. Application for deletion of chlorpromazine and haloperidol from the EMLc for the treatment of psychotic disorders in children.

1. The selection and use of essential medicines. Report of the WHO Expert Committee, 2013 (including the 18th WH O Model List of Essential Medicines and the 4th WHO Model List of Essential Medicines for Children). Geneva: World Health Organization; 2013 (WHO Technical Report Series, No. 985; https://apps.who.int/iris/handle/10665/112729, a ccessed 6 October 2023).
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