# Diagnostic criteria of Preeclampsia: A review

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**ABSTRACT**

**Introduction:** The symptoms of preeclampsia include headache, visual changes, pain in epigastric region or right upper quadrant associated with nausea and vomiting. When there is no proteinuria, preeclampsia needs to be taken into account when pregnancy hypertension is associated with sustainable brain symptoms, pain in epigastric region or right upper quadrant associated with nausea and vomiting, fetal growth restriction, *thrombocytopenia, and abnormal hepatic enzymes* .

**Methods:** Searches were conducted by two independent researchers in international (PubMed, Web of science, Scopus and Google scholar) and national (SID, Magiran) databases for related studies from the inception of the databases to September 2017 (without time limitation) in English and Persian languages. To ensure literature saturation, the reference lists of included studies or relevant reviews identifed through the search were scanned.

**Discussion:** Preeclampsia can be classified into mild and severe types. Distinguishing these two forms is conducted based on hypertension, proteinuria, and the involvement of other organ systems. *The diagnosis of this syndrome is likely to be misleading. A disease for which HELLP syndrome diagnosis is automatically defined in the category of severe preeclampsia. Another form of severe preeclampsia is eclampsia that can be defined as the incidence of seizures that cannot be attributed to other causes.*

**KEY WORDS:** preeclampsia, preeclampsiaseverity, Diagnostic criteria

## INTRODUCTION:

In healthy a woman who has not delivered a baby, the incidence rate of preeclampsia ranges from 2-7%. The symptoms of preeclampsia include headache, visual changes, pain in epigastric region or right upper quadrant associated with nausea and vomiting (1). When there is no proteinuria, preeclampsia needs to be taken into account when pregnancy hypertension is associated with sustainable brain symptoms, pain in epigastric region or right upper quadrant associated with nausea and vomiting, fetal growth restriction, *thrombocytopenia, and abnormal hepatic enzymes* (2).

## Methods:
### Search strategy

Searches were conducted by two independent researchers in international (PubMed, Web of science, Scopus and Google scholar) and national (SID, Magiran) databases for related studies from the inception of the databases to September 2017 (without time limitation) in English and Persian languages. To ensure literature saturation, the reference lists of included studies or relevant reviews identifed through the search were scanned. The specifc search strategies were created by a Health Sciences Librarian with expertise in systematic review search using the MESH terms and free terms according to the PRESS standard. After the MEDLINE strategy was finalized, it was adapted to search in other databases. Accordingly, PROSPERO was searched for ongoing or recently related completed systematic reviews. The key words used in the search strategy were "preeclampsia, preeclampsiaseverity, Diagnostic criteria" and Iran which were combined with Boolean operators including AND, OR, and NOT.

### Study selection

Results of the Literature review were exported to Endnote. Prior to the formal screening process, a

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calibration exercise was undertaken to pilot and refine the screening. Formal screening process of titles and abstracts were conducted by two researchers according to the eligibility criteria, and consensus method was used for solving controversies among the two researchers. The full text was obtained for all titles that met the inclusion criteria. Additional information was retrieved from the study authors in order to resolve queries regarding the eligibility criteria. The reasons for the exclusion criteria were recorded. Neither of the review authors was blinded to the journal titles, the study authors or institutions.

**Preeclampsia severity**

Preeclampsia can be classified into mild and severe types. Distinguishing these two forms is conducted based on hypertension, proteinuria, and the involvement of other organ systems (3). The diagnostic criteria of mild and severe forms of preeclampsia are provided in table 1 and 2 respectively. It is highly necessary to provide an accurate monitoring for the patients suffering from either mild or severe preeclampsia; both forms are likely to develop to a disease very quickly (4). One severe yet special form of preeclampsia is HELLP syndrome that stands for hemolysis (H), elevated liver enzymes (EL), and low platelets counts (LP). This syndrome is manifested as laboratory findings consistent with hemodialysis, elevated level of the tests of hepatic function, and *thrombocytopenia (5). The diagnosis of this syndrome is likely to be misleading. A disease for which HELLP syndrome diagnosis is automatically defined in the category of severe preeclampsia. Another form of severe preeclampsia is eclampsia that can be defined as the incidence of seizures that cannot be attributed to other causes (6).*

### Table 1: Diagnostic criteria of mild preeclampsia (7)

The systolic blood pressure <140mmHg or diastolic blood pressure <90mmHgin two measurements with a minimum interval of 6 hours that occurs after the $20^{th}$ week of pregnancy (the interval of two measurements should not more than one week).

Proteinuria of 300 mg in the 24-hour urine sample or 1 +<in two random urinary samples with a tape test with the minimum interval of 6 hours (the interval of two measurements should not more than one week).

### Table 2Diagnostic criteria of severe preeclampsia (8)

The systolic blood pressure <160 mmHg or diastolic blood pressure <110 mmHg in two measurements with a minimum interval of 6 hours.

Proteinuria of $\leq$5g in the 24-hour urine sample or 3+< in two random urinary samples with the minimum interval of 4 hours.

Oliguria of >500cc in the 24-hour urine sample.

*Thrombocytopenia-platelet count $\geq$100.000 $mm^3$.*

Elevated level of the tests of hepatic function associated with continuous pain in epigastric region or right upper quadrant.

Pulmonary edema.

Sustainable and severe brain or visual disorders.

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