

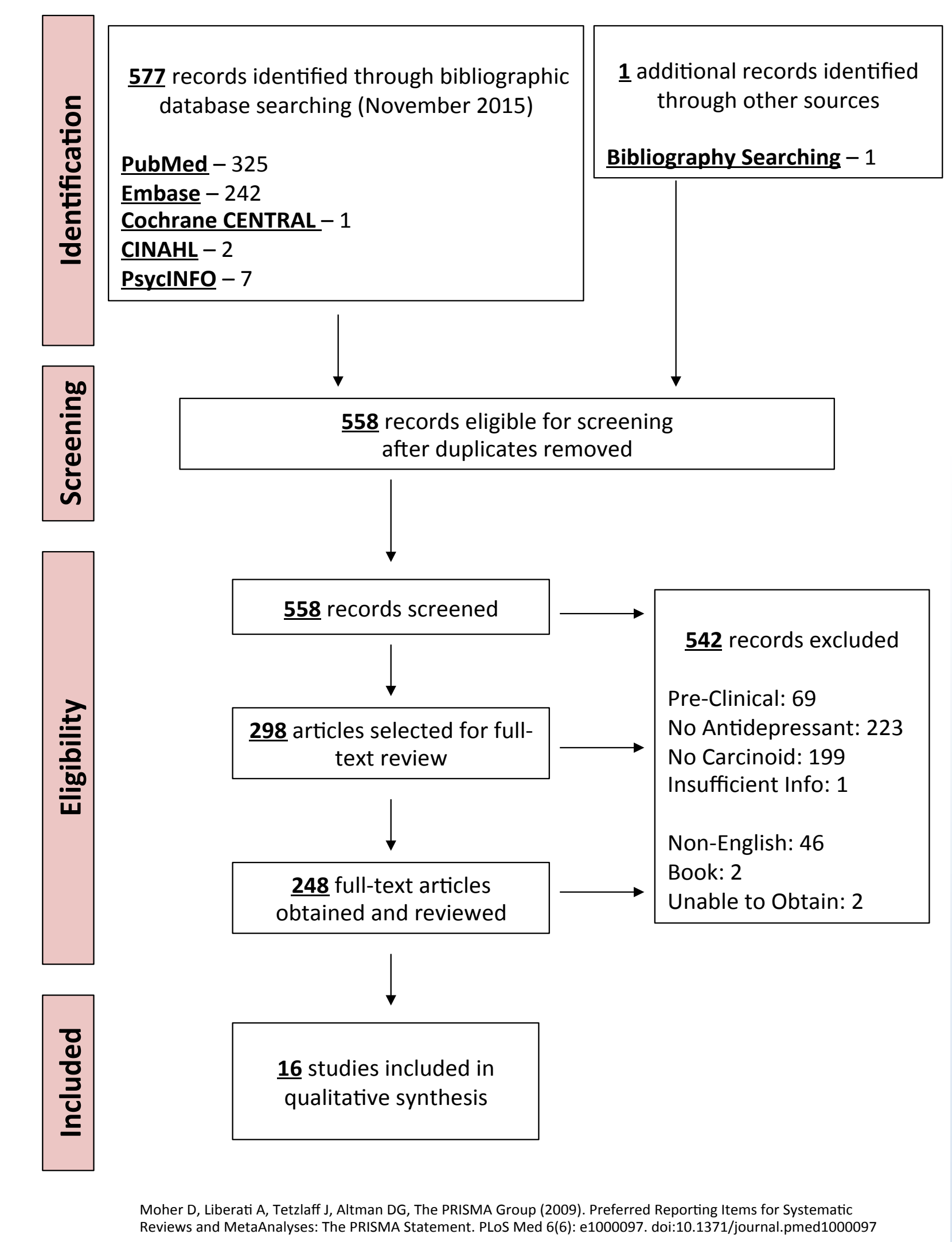
Learning Objectives

- Define the core theoretical problem that may make antidepressant use unsafe in patients with carcinoid tumors
- List the studies that have been published to date arguing for and against the safe use of antidepressants in carcinoid tumor patients.
- Weigh the risks and benefits of antidepressant use in patients with carcinoid tumor.

Introduction

- Patients with neuroendocrine tumors (NET) have high rates of depression.
- NETs may secrete vasoactive substances, including serotonin.
- Tryptophan is a precursor of serotonin, and NETs may effectively deplete serotonin in the brain by shunting it towards the tumor.
- This may explain the higher rates of depression.
- Excess serotonin in the periphery may also contribute to carcinoid syndrome (CS).
- Antidepressants may theoretically worsen CS via their serotonergic properties
- Few case reports have cautioned against prescribing antidepressants to patients with CS.
- No large studies have examined the safety of antidepressant use in NET with or without CS.

Methods



Results

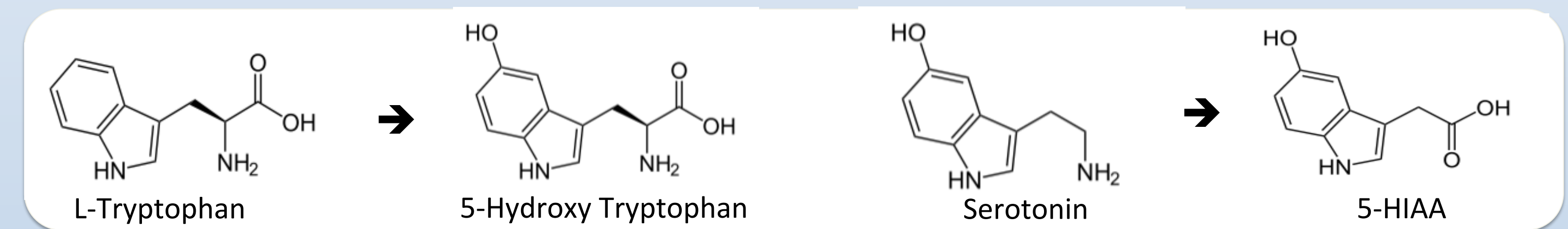
| Article | Year | Age, Gender | Antidepressant, dose (mg) if reported | Notes |
|------------------|------|-------------------------|--|---|
| Bariani et al | 2013 | 64 M | Sertraline | 12-month progression-free survival on octreotide and mTOR inhibitor |
| Bajwah et al. | 2005 | 67,F | Venlafaxine | Only took 1 dose due to nausea/vomiting |
| Furse et al | 2008 | 55 M | Fluoxetine 10 mg | “sudden deterioration in symptoms” following fluoxetine. Symptoms rapidly improved after discontinuation. |
| Larsson et al | 2001 | “several” | Unspecified | “only a few patients suffered from depression, and those who developed symptoms of depression were successfully treated with antidepressants.” |
| Noyer et al | 1997 | 56 F | Sertraline | Carcinoid tumor “unmasked” following overdose of sertraline (500 mg) in suicide attempt. Previously tolerated sertraline for 3 months. |
| Oberg et al | 1986 | Unspec. | Tricyclics | Patient developed “mental depression after 3 months of interferon which resolved on treatment with tricyclic antidepressants”... |
| Patel et al | 2009 | 51 F | Unspecified | |
| Philip et al | 2011 | 47 M | Unspecified | “He was placed on antidepressants and remains stable at this time.” |
| Russo et al | 2004 | Unspec. | Amitriptyline | |
| Seshamani et al | 2009 | 47 M | Citalopram | 5-HIAA normal. “No flushing, diarrhea, or fainting” |
| Simbera et al | 2005 | 75 F | Citalopram 20 mg, Mirtazapine 15 mg | Worsening of diarrhea (from twice daily to 14 times daily) with citalopram, leading to dehydration and hospitalization. Normalization when citalopram switched to mirtazapine. |
| Soliday et al | 2004 | 25 cases | Unspecified | 13 patients taking SSRIs, 12 patients taking other antidepressants. |
| Vollmayr et al | 2005 | 67 F | Unspecified | Abdominal pain worsened. Upon diagnosis of NET (which followed antidepressant) and surgical resection, symptoms abated. |
| Williams et al | 2005 | 61M, 64F, 56F, 68M, 75M | Sertraline 50 mg, Paroxetine 40 mg, Paroxetine 40 mg, Paroxetine 20 mg, Fluoxetine 20 mg | Duration of use ranged from 10 weeks (75M) to 5 years (56F). One of the patients (64F) had carcinoid syndrome. Two of the patients (64F and 68M) were treated with somatostatin analogs. None of the patients developed worsening carcinoid syndrome. |
| Wyatt et al | 1968 | 2 cases | MAOI | |
| Yazicioglu et al | 2012 | 64 F | Escitalopram | NET of the lung. No symptoms of carcinoid syndrome. Patient well 10 months post-resection. |

Conclusion

- Over 42 cases reported
- Nearly all did not report adverse reactions
- One patient hospitalized due to dehydration
- One patient with worsening CS symptoms following overdose
- Based on the available evidence, it appears premature to eliminate antidepressants in patients with carcinoid/ NET
- Patients should be advised about potential side-effects including the possibility of worsening of CS symptoms
- Future studies should examine whether somatostatin analogs protect against antidepressant-related side-effects in patients with carcinoid / NET
- Future studies should examine the role of non-serotonergic antidepressants in NET

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