**ACNE VULGARIS**

-clear existing lesions

-prevent new lesions

-\*\*\*minimize scarring

-watch for negative side effects in patients.

Know the drugs that worsen

Know how to make the DDX

Will take 8-12 weeks to see improvement

Exfoliants are feeble medicines

Sulfur is drying agent

Peri oral is a drug interaction

Number one drug of choice is benzoyl peroxide

Dry for the first 2 weeks

H2O is the least irritable

Topical retinoids;There will be an initial dermal turnover that will make things worse \*\*\*must use sunscreen. Will increase pustules and papules but not cysts.

Moderate topical ABXs

Severe oral ABXs

ADHD

Methylphenidate and stimulants as a whole (we cannot prescribe! but must know the pros and effects of) 70-80% have a 30% reduction in symptoms \*\*\*\* SEs insomnia and wieght loss.

overwhelming evidence that these agents work very well.

Adamoxetine is good for the inattentive (similar to nortryptaline) 2 line tx

50-60% would get good benefit

Non-stimulant

NRIs norepinephrine reuptake inhibitors 2-3 line treatment?

Behaviour management strategy 40-60% reduction

Antidepressants are a 3 line therapy.

TCA, Buproprion, Venlafaxine all have a 50% reduction in symptoms

Alpha 2 agonists 40% reduction 3-4 line.

Adult ADHD atomoxetine is the only good agent. \*\*\*\* know the big five adverse effects. \*\*\*\*\* this is the drug for people who do not react to stimulants.

Buproprion is the cheapest \*\*\* not recommended for people under 18 yoa.

**Anxiety Question**

A 23 yoa female slides into your clinic. You know something is funny when she enters your office and closes the door three times before taking a seat. She says that after a severely violent breakup with her “old man” her injuries caused her to loose the baby in her second trimester. She was in the hospital for a month but she has found that she repeats sentences in her head and does simple tasks multiple times which comforts her. It is affecting her life and her ability to get back out in the world and get living. She has tried CBT with a councilor who says she has anxiety and probably OCD. She wants to know if there are any other options to help her “get back to a normal life”

BP 12/80

HR 87

Non smoker

CBC and Blood Chem are all within normal indicies.

Please write a PICO question for this case.

What are 5 therapeutic options for this patient.

Write a prescription

What are you monitoring for?

Lifestyle changes, reduce caffeine, simple sugars, reduce etoh.

Consider and mention comorbid conditions, family Hx, financial status, sensitivity to drugs, experience,

Endpoint is often a 50% reduction in symptoms

Mention BZDs, where they fit and that they may be a future option to see MD

CBT is effective, a first choice but has cons.

Be able to explain a muted response - drug abuse, underlying condition, P/E.

Always start at a low dose because you are worried about SEs and worsening of symptoms.

Aim for one year treatment

Must mention that most first line anxiolytics are toxic in overdose

Cost is important

Never use and MAOI. Just too tricky and lots of other options

SSRIs 30% improve with this drug

Any of the anxiolytics have the potential to increase anxiety

Paroxetine is the most sedating

When using SSRIs very low doses to start to avoid aggravation.

With social anxiety we are concerned about depression and etoh use.

PTSD propranolol can be given to prevent episode.

**ASTHMA**

A 27 yoa male persian/english pt saunters into your clinic. He has been trying to control his symptoms of asthma for years but it is still a problem. He has had trouble playing soccer with his team during games and training.

He occasionally take tylenol (acetominophen) and curcumin extract for aches and pains. He enjoys Player’s Light cigarettes socially when drinking > 3 nights per week but admits to having a smoke here and there almost every day.

HR 67BPM

RR 12PM

BP 123/87 on three consecutive visits

He has no allergies and has no other complaints.

Medications

Salbutamol >6 times per week

Ipratroprium

What are your goals of therapy?

List 5 treatment options.

Select one treatment option, justify it and write a prescription for this patient.

Who and what are you monitoring for. Give timelines.

Your career hinges on this question... you have 20 minutes.

O2 is good to achieve saturation and provide support in acute cases. Prednisone should accompany this.

Salbutamol (SABA) puff until you get effect, can dec BP and inc HR tremour, patients

Salbutamol is for acute symptomsmay get jittery. Good for 2-4 hours.

Anti cholinergic, Ipratroprium 10% reduction in hospitalization when combined with Salbutamol.

Corticosteroids (oral)(prednisone) For only one to two days there is no increased risk of infection, to be used for severe cases in the short term.

Prednisone- dose for this is uncertain.

Mg-James says it does nothing

ICS all pretty much the same

LABA salmeterol, formeterol. Formeterol is fastest acting so a better agent

Salmeterol is cheap

Ipratroprium

Leukotriene antagonists (oral) weaker evidence

Cromolyn Ketotifen there is some benefit, only if others are not treated.

ICS regular use

 budosemide is > than terbutralin

 budosemide does not remove any symptoms completely.

If there is good control with oral corticosteroids stay with them but look for the lowest effective dose

Use a chart with low daily doses to monitor for the best dose.

SE dysphonia

\*\*to avoid thrush - wash out mouth after using ICS \*\*\*10-20% will get this.

LABA > LTRA (oral) probably better inhaled

Inhaled is better as it is direct to the organ

\*\*LABA on their own can increase BAD asthma deaths

\*\*Should be on ICS when taking LABAs. This will be on the exam

Formeterol can help, quick acting LABA but a bit expensive.

\*\* never double dose the ICS not as effective or efficient as adding a cheaper agent(tiotroprium and salmeterol)

Steroid and salbutamol in combo work better than Sal alone. Find the easiest and the cheapest option.

SABA

SABA, Ipratroprium to reduce acute asthma episodes 10%

SABA ICS

SABA, ICS, LABA

Beyond this prednisone orally (outside of our scope)

Question can a pt be on all three? Sabutamol, formeterol and ICS?

When do we consider the LTRAs

**ATOPIC DERMATITIS**

Allergic contact dermatitis

Irritant dermatits

nummular ecxema

Number one thing is to check for allergies

Have very dry skin

Active immune system

Therapeutic bath oils are good as they dispense in the bath water

Urea is good to use only after there is control over the ecxema

There are 4 urea agents

Topical corticosteroids - will have sez

Hydrocortisone 1% is the mainstay of treatment

**COPD**

Salbutamol is the only drug that seems to work, for everything else the evidence is very thin.

ABX with chronic COPD is not a bad thing and may help but there are no comparisons.

\*\*exacerbation with COPD - least expensive is amoxicillin. ABX 5 days.

Next level add ipratroprium with Salbutamol

ICS if it gets more advanced

ICS are not for acute cases

Tiotroprium reduces hospitalizations 1/33 in COPD. Choose Tiotroprium here because ICS increases the risk of pneumonia and thrush 5-10%.

Tiotroprium is the first agent as all of the LABAs are almost the same but it has less SEs

Use pt experience.

**Case 3 Depression**

A 17 yoa female comes into the clinic complaining of loss of motivation, dysphoria, and no appetite for 6 months after she failed her math exam at school. She is still going to school but her grades are slipping. She has quite her job at MacDonalds as a cook. She has lost 10lb in the past 3 months. She was prescribed citalopram at 30mg ID by her MD 8-10 weeks previously. She has had thoughts of suicide recently but does not have a plan and does not feel that she will harm herself in the future. She wants to feel “normal again”.

What are the 5 goals of therapy?

What are your treatment options for this case? Please list two pros and two cons for each. Please support each treatment option with material from the class notes.

Write a PICO question for this case.

Answers

PICO Question,

Is Citalopram as effective in improving mood and motivation in a 17 yoa female diagnosed with depression as buproprion?

**Depression Answers**

Five goals of therapy

1. Improve her motivation

2. Reduce dysphoria

3. Stop thoughts of suicide

4. Stabilize depressive symptoms

1. Improve quality of life

Other goals of therapy that can be used,

Stabilize depressive symptoms

Prevent complications

Minimize side effects’

Induce remission

Improve quality of life

Education

Prevent relapse

Maintenance of stable mood

Manage side effects

I choose to use an antidepressant because

All antidepressants are equally effective at reducing depression

Antidepressants help reduce the symptoms of depression 50-70 percent in adults and decrease the risk of relapse if taken for greater than one year.

Benefits over placebo are greater as the severity of depression increases.

Antidepressants are on average better than placebo in treating depression.

According to the STAR\*D Trial after no response from an antidepressant after 10 weeks 30% of pts will respond well to another class of antidepressant. A further 13.7 after that and a further 13 percent after that.

Choices

1 Amitryptiline TCA

 Higher risk of overdose compared to SSRIs

 Sexual dysfunction

 Less risk of suicide in Children and Adolescents, may be a factor with current SSRI.

 There is a 70% decrease in relapse if patient receives drug therapy for depression. 50% decrease in relapse if treated for a year.

2. Buproprion

 Equal to SSRIs for depression. Blocks the uptake of NE and DA.

 Effective in smoking cessation

 No documented withdrawal reactions

 Minimal sexual side effects

 Agitation, dry mouth, constipation, headache, tremor, seizure risk, hypertension.

 \*\* Are patients taking Zyban? Same drug/ risk of overdose.

3. MAOI Moclobemide

 Can be inexpensive

 Effective in the treatment of depression 50% of cases

 Nausea,

 insomnia

 dizziness

4. Counseling CBT.

 As effective in mild to moderate depression as AD

 Expensive

 Not as effective in moderate to severe depression

5. Citalopram

SSRIs effective in depressive and anxiety disorders 50-60% of cases.

All are safer in overdose

They are the easiest to stop taking

Flat dose response curve so use lower doses.

 Safer in case of overdose

 Less drug interactions

 May have lower cost

 Higher risk of suicide in Adolescents

 Sexual dysfunction

Prescription

Amitryptiline 25mg po ID for 6 weeks.

Monitoring parameters

 Explain to the patient that it could be 5-18 months that they are taking the medicine. That they should see an effect in 6 weeks and if they don’t there are options for them to change.

There is a 50% chance of improvement with treatment with AD

Likely side effects

Don’t discontinue if feeling better. Better to come and see me.

50-70% decrease in risk of relapse with continued treatment.

When it is time to stop taper slowly.

WE should start to see improvement in 4-6 weeks.

Want to see the patient every 1-2 weeks until resolution has been reached.

\*\*\*\*Must monitor for serotonin syndrome.

 delirium, agitation, hyperfpyrexia, diaphoresis, myoclonus, hyperflexia, diarrhea and incoordination. Treatment is to stop the suspected drug.

Must monitor for discontinuation syndrome. Fluish type syndrome.

All SSRIs have sexual dysfunction.

Monitoring

Target syndromes for severity of depression for 7-10 days for 4-6 weeks. Then once every 1-3 months.

Antidepressant adverse effects every 1-2 weeks for a month then once every three months

Increases in suicidal thoughts and behaviours for 4-8 weeks

Serotonin syndrome first 2 weeks of new AD medication

Discontinuation syndrome at the discontinuation of therapy

 Thoughts/risk of suicide

 \*\*\*Remain on therapy 5-9 months past episode if first time

 \*\*\*Remain on therapy for one year of greater if this is a second occurrence.

\*\*\*Switch to another class if no effect seen in 6 weeks.

Factors to consider when looking at this case

Age

Previous treatment response

Comorbid psychiatric or medical disorders

Drug interactions

Accessibility

Pharmacokinetics

Potential side effects

Suicide risk

Patient preferences

Clinician experience

Effectiveness of treatment

**Case 2 Diabetes**

A 55 yoa male comes to your clinic with a 5 year history of type II diabetes. He is currently taking metformin 1500mg BID. He has recently been experiencing polyuria, increased thirst, and his HbA1c is 10.5. Fasting glucose is 9.5 mmol/l. He smokes one pack of Malboro Reds every day. He has osteoarthritis in both of his knees which is very painful for him and limits his ability to walk. His blood pressure is 145/ 90 on three consecutive visits.

Please list 5 treatment options? With each treatment option list a 2 pros and 2 cons.

What are the 5 goals of therapy

Write a prescription for your treatment option of choice for this patient.

Please write a PICO question for this case.

What are you and, or the patient going to be monitoring for and how often?

**Case 2 Diabetes Answers**

Goals of Therapy

1. Control Symptoms
2. Decrease Risk of Hyperglycemia
3. Establish optimum glucose control
4. Control co-morbidities
5. Smoking cessation

\*Others that could be added are, control knee pain, address obesity.

PICO question

In a 55 yoa male with DM taking 500mg of metformin tid is rosiglitazone more effective than glyburide in minimizing hyperglycemia?

Treatment Options

1. Glyburide- sulfonylurea- This is the most cost effective second line agent.

Pros

 Promote Insulin secretion from pancreas

 HbA1c decrease

 Rapid reduction in blood glucose

 Inexpensive

 Once or BID dosing

Cons

 Hypoglycemia risk

 Weight gain

1. Pioglitazone- thiazolidinedione- Need less people to treat (77:250) and more to harm (200:125) when compared to Rosiglitazone.

Pro

 Reduce hepatic glucose production

 Decrease all cause mortality, nonfatal stroke, and MI

 Increase HDL

 Decrease Triglycerides

 Decrease CRP

Cons

 Edema

 Wt Gain

 Worsen heart failure

 Weeks to be effective

 Fracture risk increase

 Costly

1. Repaglinide- meglitinide-

Pro

 Increase insulin release

 Decrease HbA1c

 Lower risk of hypoglycemia as opposed to insulin

Cons

 Hypoglycemia

 Taken with meals

 Short Acting

 Costly

1. Insulin- This is usually after second line agents have not been able to control blood glucose. It can be used in combination in Type II diabetes. Start with NPH long acting insulin and slowly increase dose. We are watching for hypoglycemia here. Fixing lows is especially important. No rush to get to a max dose.

Monitor -

Will have to monitor for hypoglycemia for the first month or so. Check blood glucose three to four times per day.

1. Buproprion - smoking cessation- This is important to lower cardiovascular risk and improve over all quality of life.

19% effective as opposed to 9% in placebo.

Buproprion doubles the odds of abstinence at 6 months from that of Nicotine Replacement therapy.

Pro

 Decrease risk of cardiovascular event

 Improve quality of life

 Shown to be more effective than Nicotine replacement therapy

Con

 Insomnia

 Dry mouth

 Disturbed concentration

 Nausea

Prescription

Glyburide 2.5mg id 3 months.

Monitoring Parameters

There is little evidence that there is a large improvement in patients health with vigilant monitoring of blood glucose or a strict adherence to <7 HbA1c.

Blood glucose 3-6 times per day to understand the medicine/meals and the effect on blood glucose. Find a routine and try to stick to that.

HbA1c every 3 moths for 6 months and once per year after that.

Kidney function

Symptoms and goals of therapy are to be monitor.

Weight gain waist to hip ratio.

KI yearly.

Lipids, yearly.

Optometrist

**Dyslipidemia**

Caution with children and pregnancy

High fiber

Exercise 40min/day

Fish

Veggies

**HEAD ACHE**

ASA is the first choice

Ibuprophen is the second choice

Sumatriptan is similar but expensive

All triptans are effective and better than placebo. caution of the side effect of a tight chest. and they are very expensive.

USE Ergots and triptans < 10 days per month

USE NSAIDS for less than 15 days per month

\*\* Monitor with a diary for symptoms of headache

Keep a record of medicines that have been effective

Can use drugs from the same class as tx options.

**Case 1 Heart Failure**

A 65 yoa male patient hobbles into your clinic. He is experiencing tachypnea, cyanotic lips with crackles and rales can be heard on auscultation. He is on lovastatin 40mg BID. He smokes 1 pack of Players Light cigarettes per day. He complains of insomnia, weakness, fatigue and coughing at night. He gets aches and pains in his hands these days and he takes three extra strength Advil (ibuprophen) for this when needed.

Cholesterol to HDL is 6.1

BP 125/ 86

Family HX. His father died from a “major jammer” (MI) at 46.

Calculate the patients 5 year risk of a Cardiovascular Event.

What are 5 goals of therapy?

Please list five treatment options for this patient and list two pros and two cons for each. Back up these choices with materials from the course notes.

Write a prescription for this patient.

What are you and, or the patient going to monitor for and how often?

**Case 1 Heart Failure Answers**

Goals of Therapy

1. Treat risk factors

2. Prevent disease progression

3. Improve symptoms, exercise tolerance and quality of life

4. Reduce morbidity and mortality

1. Smoking cessation

Other factors that may be considered goals for therapy are,

 Improve sleep, reduce weakness and fatigue at night.

Treatment Options

Ace or and ARB is first line. BB then diuretic and lastly CCB if there is angina present.

ACE and BB can be started at the same time.

\*\*If symptoms worsen when starting on an

1. ARB - Candesartan- 5% reduction in all deaths and cardiovascular deaths. This is a significant outcome.

Start with a low dose and titrate up to a higher dose. Increasing dose at 2 week intervals. Stop at maximum tolerated dose, this is the dose at which there are still no symptoms.

Cons

Hypotension, hyperkalemia, renal insufficiency.

Pros

Improve symptoms of heart failure, reduce risk of morbidity and mortality.

*Monitor with this drug*

*Must measure BP, potassium and creatinine before treatment and one week after each increase in dosage. 30% increase in serum creatinine is acceptable with treatment.*

NSAIDs and K+

1. Beta Blocker - carvedilol- 5% reduction in all deaths and cardiovascular deaths. This is a significant outcome. Recommended in all patients with <40% LVEF.

Cons

Malaise, fatigue, erectile dysfunction, hypotension

Improve quality of life, tolerance to exercise

Reduce mortality and morbidity

*Monitor with this patient.*

*Morning wt.*

*Do not discontinue suddenly.*

1. Thiazide Diuretic- furosemide- required in most patients with HF to control symptoms. Lowest effective dose should be used.

Improve quality of life and tolerance to exercise.

Nausea, anorexia, fatigue

*Must monitor electrolytes, Na, cl, k, mg++, hyperuricemia, hyperglycemia. This can be done every two weeks as dose is being raised to effective dose.*

*\*Drug interactions, digoxin, NSAIDS and corticosteroids.*

1. Angiotensin II Receptor Blocker - AR

 There is no evidence of additional benefit in choosing to use an ARB and an ACE inhibitor together. If the patient is not taking a B-blocker it is possible that the pt may receive some additional benefit from using the two together.

Can be used to replace the ACE if the cough is intolerable though the benefits of reduced mortality and morbidity are not as great.

Associated with Renal failure and hyperkalemia.

No cough, improve quality of life - tolerance to exercise.

*\*Drug interactions ACE, K+ and NSAIDS.*

1. \*\*\*Aldosterone antagonists - spironolactone- 7.5% reduction in hospitalizations, 10% reduction in death from cardiac causes, and 11% reduction in death from any cause.

Most effective in patients with severe HF. Post MI or with diabetes melitus.

May be used in combination with other drugs

Should not be started in patients with K>5.0, creatinine >221 or creatinine clearance <30.

Start with very low dose and increase every two weeks. Titrate until the K and renal function are stable. Monitor renal function and K every 3 months after

Improve mortality and morbidity

Reduce disease progression

Dehydration

Gynecomastia

*\*Drug interactions with ARBs, ACE and NSAIDs*

1. Digoxin Improves symptoms and reduces risks of hospitalization for HF. Does not reduce mortality in moderate to severe HF.

Have to monitor this drug like crazy. Symptoms and toxicity.

7. CCB are safe, do not reduce mortality and may be used in patients with angina.

7.Buproprion - smoking cessation-

Write up required here, after we have covered smoking cessation.

Prescription,

Stop taking ibuprophen as there are drug interactions with Candesartan and Carvedilol.

Candesartan 4mg po ID 4 weeks

Acetominophen 325 mg Q4H

Carvedilol 3.125mg po ID

I choose an ARB, specifically candesartan because there is evidence that it reduces hospitalizations 5% and Cardiovascular deaths 2%. These are significant outcomes.

Monitoring parameters

In all patients monitor wt, electrolytes, creatinine, and BP. 1-2 weeks after every adjustment in dose of any of the medications used for HF.

Calculated 5 year risk of Cardiovascular event is 20-25% which is considered Very High.

**HYPERTENSION**

DIET -

EXERCISE

low etoh consumption only 0-2 drinks per day.

Smoking cessation

Na reduction, Weight loss, Etoh reduction, Exercise, Dietary recommendations, all bring down BP 5/2.5 to 10/7.5 each. This is comparable to any pharmacological agent.

Lipid lowering therapy can be done in conjunction and should be considered here.

Any drug used in the treatment of hypertension should be titrated upwards in stronger and stronger doses.

Combination of drugs is not that helpful

Only mix the diuretic with the other classes

Monitoring; adeherance to therapy, BP, quarterly visits to avoid quiting.

Prescribe a low dose for elderly.

Start with low doses.

**INSOMNIA**

GOT reduce daytime impairment is a side effect that must be mentioned

Sleep diary to non pharm to pharm options

SRIs are unpredictlable drugs use tricyclics

chloral hydrate sometimes used

\*\* discuss tapering of the drugs at the outset of use

BZD 8/10 works well

Antihistamines (non prescriptipon but a great first line drug)

Trazadone- long sleep

Benadryl- 6/7 works

Zopiclone 8/10 works

\*\*\* key is to look for 5-6 hour duration to minimize the hangover effects

Read about zolpidem

Trazadone has limited data, lack of obectiveness and more SEs

TWO FIRST CHOICES ARE ZOPICLONE AND TEMAZEPAM

**OSTEOPOROSIS**

Hormone replacement therapy problems from dosing way too high

Bisphosphenates give an overall improvement of 1-3%

MUST tell the patient of the costs and side effects

Increase the risk of femoral fracture .1% and decrease the risk of all othe 10 times more.

Strontium is effective

HRT always find the lowest effective dose aim for 3-4 years of tx. Lots of SEs with high doses. Keep lowering if there are good results until there are no side effects

VD is better than calcium

Estrogen lowers the markers but there is no difference in CVD 1.6 DVTs increased risk.

**PAIN MANAGEMENT**

Don’t focus on the NSAIDS as they are not prescription but know the risks and problems with them

Opioids are not in our scope so don’t worry about them either

NSAIDS

chronic use increases the upper GI bleed risk, elevated blood pressure,

10-20% abdominal pain

1% ulcer

Gout Pain - first choice, colchicine is the second choice. Colchicine can redue pain by 50%

Cox-2 10-20% less ulcers

What are the sxs of a slow GI bleed and this must be what you are monitoring for.

Acetominophen

can be hard on the liver, confusion in the elderly, caution in KI problems,

**PEPTIC ULCER DISEASE**

A 43 yoa Woodbridge male with obvious abdominal obesity slips into your office. With his back to the wall he tells you that he is getting abdominal pain, lethargy, dark tarry stools and he “feel like shit”. You recognize him as the leader of a local syndicate in the general area though he describes his job as “waste management”. You have to ask him several times to put out his cigarette and the look he gives you each time is chilling and you doubt that he is ready or willing to quite. He has had his symptoms for more than a year. He needs to get resolution soon, he is worried that being in your office will indicate weakness to his enemies.

He has an assortment of etoh beverages every day.

He has been taking antacids by the pound with no avail.

He had a life threatening experience in the hospital last year with an ABX called ampicillin.

He admits to occasional recreational drug use but he not specific. (he sniffs often)

BP 139/84

HR 84

RR 12

CHL ratio 6

BP 135/75

Smoker

Calculate this patients cardiovascular risk

List five pharmacologic options for this patient

Which would you choose and why?

What are you monitoring for and what are your timelines?

60% resolution of symptoms in people who use PPIs. Start with this as it is the most effective.

40% H2RA “”

H.Pylori if treated for this there is only 15% reccurance of the ulcer

Acid suppression alone is 65% recurrence

\*\*\* must know how to monitor and know the symptoms of GI bleed.

Bleeding 2.9 vs 20% in the non tx group

Any of the non-prescription meds - dont think too much about it.

1. pylori cases, ABX tx will come with tx for sxs

There is a combination of drugs here for H.pylori 567 combination from one of the slides.

There is no real reason to test for H.pylori, takes time and often works, no harm to using ABX,

Misoprostol - will cause abortions. Very carful in using this drug.

Dyspepsia secondary to NSAIDS protocol

1. PPI
2. H2RA
3. Misoprostol

Protocol for avoiding NSAID induced ulcers

1. PPI
2. H2Ra
3. Misoprostol

**PSORIASIS**

improve the physical signs of psoriasis and the patient’s quality of life

facilitate the patients acceptance of this chronic disease coupled with realistic expectations

provide psoriasis control for the longest periods of time

Read in the blue book about using different body parts

Hydrocortisone cream 1% is not prescription

**SMOKING CESSATION**

\*\* The most cost effective impact on quality of life

NRT this is over the counter do not focus for the exam.

Delayed onset agents are

1. Buproprion
2. Venecline
3. Nortryptyline

All agents are about 20% effective

Gum is the cheapest but but know the contraindications

Patch is slightly more effective

Buproprion is equal to nortryptaline

Buproprion efficacy is slightly more effective \*\* Side effects are siezure, (CI head tumour, Head injury) Insomnia, Dry mouth, Poor concentration.

Nortryptaline 1-3 weeks before the quit date.

25-100mg 1-3 weeks.

3 Varenicycline has the highest efficacy but $$$ and lots of side effects.

start before the quit date. .5mg BID

Dose .5mg BID and works very well.