ISRCTN51184184 ABRS-P1-DOSE Phase 1 clinical trial to determine maximum tolerable dose of African Bitter Root Food Supplement

Plain English Summary of Results

What was this study about?

This study looked at a herbal food supplement called African Bitter Root Supplement (ABRS), which has been used for many generations as a traditional food supplement in parts of Nigeria. People already using ABRS have reported using it for sickle cell disease pain or for osteoarthritis, but at the time this study started, no formal research had confirmed whether ABRS is helpful for either condition.

Before any study can properly test whether a supplement helps a health condition, researchers first need to know how much of it people can safely take. That is what this study was designed to find out. It did not test whether ABRS works for any health condition, only how much of it is safe to take as a single dose.

Who took part?

24 adults were recruited for this study, from two centres, one in Europe and one in Nigeria. As the study progressed, some of these volunteers were not needed and were never called forward for a medical check, because the study reached its conclusion without needing to test further dose levels or repeat any group. One further volunteer was medically checked but was found, at that check, to be taking a medication that had not been mentioned when she volunteered and that affected her eligibility; she did not take part and was not included in the results.

In total, 13 people went on to take part and receive doses. Of these, one person's results could not be counted, because of an issue identified after she had finished taking part (she took her second dose without the study doctor present, contrary to the study's rules), so the final results are based on 12 people: 2 with sickle cell disease, 6 with osteoarthritis, and 4 healthy volunteers who do not have either condition. 3 were female and 9 were male.

What did participants do?

Each participant took two doses at their assigned level, at least seven days apart: one containing ABRS and one containing a placebo (a dummy version with no ABRS in it), in a random order that neither the participant nor the research team could see in advance. This is called double-blind testing, and it helps make sure the results are fair and not affected by what people expect to happen.

The study started with a dose similar to what people already use day-to-day, and slowly increased the dose in planned steps, provided no problems were seen at each step. In total there were four dose levels, rising to 25 grams a day, taken all at once, not spread through the day, which is a higher amount than anyone would normally take. Both participants with sickle cell disease took part at the two highest dose levels.

After each dose, participants were checked in with several times over the following week and were specifically asked about any joint, stomach or gut symptoms as well as any other health problems, and had a full medical check-up, including blood tests and a heart trace (ECG), before and after taking part.

What did the study find?

No safety concerns caused by ABRS were seen at any of the dose levels tested, including at the highest dose of 25 grams. Nobody in the study had a health problem that the research doctors judged was probably caused by ABRS, at any dose level.

Three health events did happen during the study, all in the two participants with sickle cell disease. Each event was looked into carefully and reported to the study's independent safety board straight away, even though

none were found to be linked to ABRS.

One participant with sickle cell disease had two separate pain crises during the study, about a week apart from her two doses. She has frequent crises normally, roughly twice a month in cooler weather, and has more than one known trigger: getting cold, and pain from a stomach ulcer she had at the start of the study. Because of this, before she took part, the study team paid for her to be treated to clear the stomach infection causing her ulcer, and she confirmed she was free of ulcer pain and could comfortably eat and drink things that used to upset her stomach. She was also asked specifically about stomach symptoms at every single check-in throughout the study, and never reported any, including in the days around both crises. Both crises were instead linked to cold exposure, the first matched a day she had been sitting for a long time directly in the path of air conditioning while wearing light clothing. Because both known triggers were carefully checked and only cold exposure fitted the pattern, the study team's assessment is that ABRS did not cause either crisis.

The other participant with sickle cell disease developed malaria during the study, unrelated to taking part. She was not admitted to hospital and was treated as an outpatient. She worked outdoors on a farm in a high-risk area without precautions against mosquito bites, and malaria typically takes one to four weeks to cause symptoms after infection, meaning she was very likely already infected before she joined the trial. In Nigeria, anyone with possible malaria is routinely tested for typhoid at the same time, since typhoid is very common there and causes similar symptoms - this is standard practice, not an extra or unusual test. Both tests came back positive. Her symptoms were assessed as being caused by the malaria; she had no symptoms that pointed specifically to typhoid, which fits with her carrying the typhoid bacteria without it being active. The study's standard health checks before taking part did not test for malaria or typhoid, so there is no direct before-and-after comparison, but the team's assessment is that carrying typhoid bacteria without symptoms almost certainly predates the study: she stayed in accommodation arranged by the study team throughout her participation, with all her food prepared for her, and her blood tests at her original health check were normal, which is typical for someone who carries the bacteria without symptoms. It is not counted as a side effect of the study, since it reflects a pre-existing condition rather than something that happened because of taking part. The sponsor arranged and paid for her to be treated for this, because she has a one-year-old baby at home and it is standard practice to treat a carrier in that situation, regardless of the study.

Did the study show ABRS helps any health condition?

No. This study was not designed to test whether ABRS helps sickle cell disease, osteoarthritis, or any other condition, and it does not provide evidence either way on that question. A few specific factors identified during the study mean any impression of benefit would not be reliable evidence: more of the participants with osteoarthritis happened to receive the real supplement, rather than the placebo, on their first dose, which could make a difference feel bigger than it really is; some participants spoke to each other about the study while it was running, which can affect how people report their experiences; and for two participants, it was not fully clear from their medical history whether their osteoarthritis diagnosis was fully confirmed.

Whether ABRS provides any real benefit for these conditions is a separate question, and would need to be tested properly in a future study specifically designed to answer it, comparing ABRS against a placebo under conditions that avoid these issues.

Ongoing support for participants

After the study ended, and having seen how the participants with sickle cell disease used ABRS in their daily lives, the sponsor arranged and paid for a package of ongoing care for both of them. This was not offered or promised to them before or during the study, so it could not have influenced their decision to take part. The package includes a specialist blood doctor's review, a year of a standard sickle cell medication with regular monitoring, and a supply of common pain and stomach-protection medicines for home use. The sponsor also paid for typhoid vaccinations for both participants with sickle cell disease, and for the second participant's baby.

What happens next?

The information from this study will be used to help design a future study (a Phase 2 trial), which would be needed before any conclusions could be drawn about whether ABRS provides a real health benefit.

Who can I contact?

For questions about this study, please contact: compliance@deeplifemedical.com